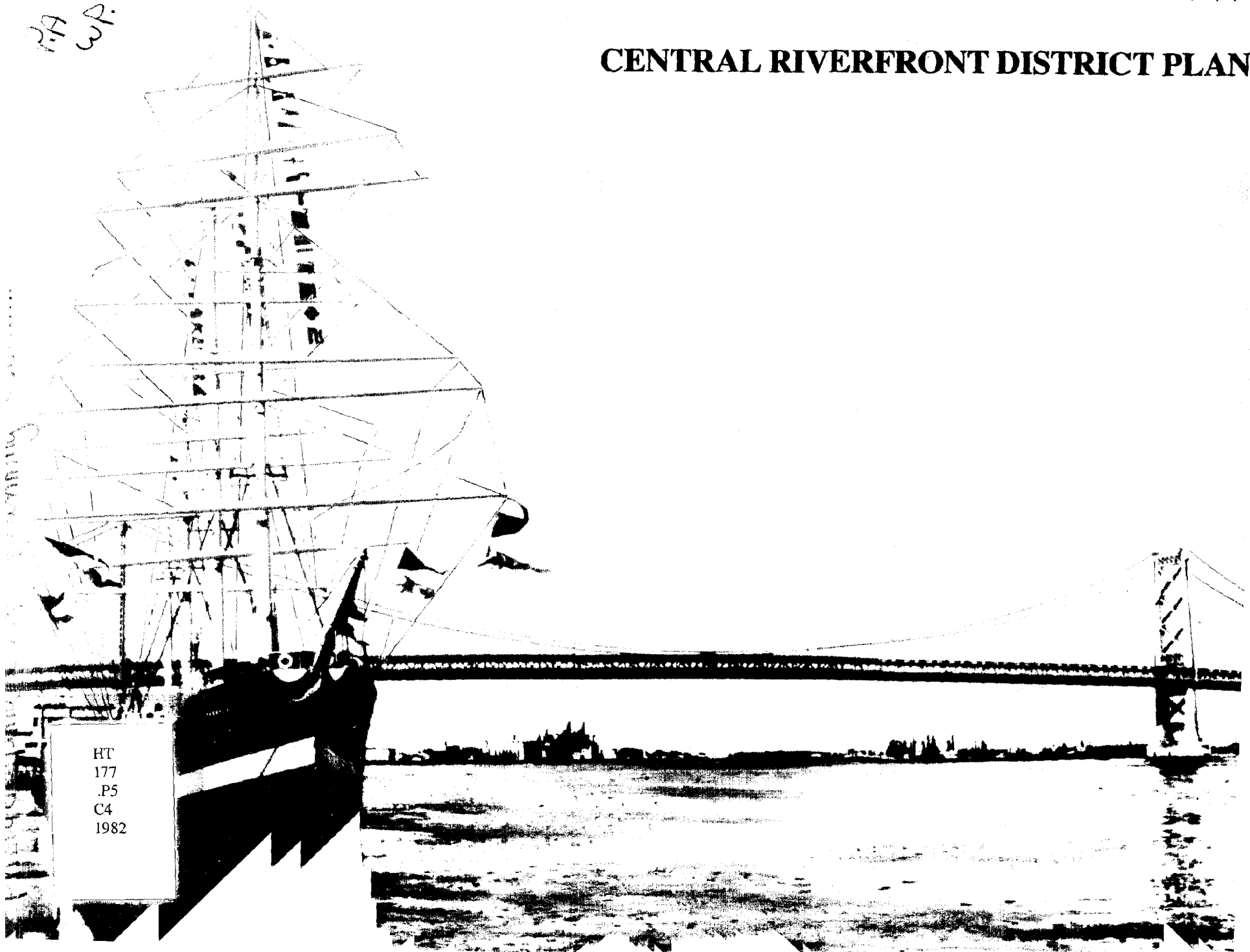


06499

# CENTRAL RIVERFRONT DISTRICT PLAN



HT  
177  
.P5  
C4  
1982

**William J. Green, Mayor**

**Philadelphia City Planning Commission**

**William L. Rafsky, Chairperson**

**William W. Batoff**

**Louis J. Cissone**

**G. Edward DeSeve**

**Richard A. Doran**

**W. Wilson Goode**

**Margy Ellin Meyerson**

**Walter E. Sucharski**

**G. Craig Schelter, Executive Director**

**Barbara J. Kaplan, Deputy Director**

**Project Manager:** Elba Ceñal Pellecchia,  
Chief, Comprehensive Planning

**Planners:** David A. Baldinger  
Chief, Community Planning  
Ernest J. Leonardo  
William E. Toffey  
Deborah S. Schaaf  
Hadley S. King III  
Massoud Mohadjeri  
R. Duane Perry  
Cynthia L. Cronin  
Stephen P. Andrade

**Graphics:** Cartographic Division

**Typists:** Deborah A. Zappas  
Devorha M. Moultrie

*This plan was financed in part through a Coastal Zone Management grant from the Pennsylvania Department of Environmental Resources with funds provided by the National Oceanic and Atmospheric Administration.*

**CENTRAL RIVERFRONT DISTRICT PLAN**  
**Philadelphia City Planning Commission**

**US Department of Commerce**  
**NOAA Coastal Services Center Library**  
2204 South Hobson Avenue  
Charleston, SC 29405-2410

**City of Philadelphia**  
William J. Green, Mayor







# Contents

---

## Introduction

---

## Summary

---

## Existing Conditions

---

- 4 Historical Perspective
- 15 Economic Profile
- 16 Land Use Analysis
- 20 Circulation
  - 20 Highway Access
  - 23 Traffic Flow
  - 24 Transit
- 24 Environmental Factors

## Development Potential

---

- 30 Urban Setting
- 32 Image
- 34 Development Patterns
- 35 Development Opportunities
  - 35 Penn's Landing
  - 36 North Bridge
  - 39 Penn's Landing South
- 40 Circulation Opportunities and Constraints
  - 40 Current Plans and Studies
  - 40 Traffic Impact Analysis of Riverfront Development
- 44 Environmental Constraints
- 47 Legal Constraints

## The Central Riverfront Plan

---

- 49 Opportunities
- 51 Planning Concept
- 60 Summary of Goals and Objectives
- 63 Recommendations
  - 63 Penn's Landing
  - 63 New Residential Communities
  - 67 Public Enjoyment of the Riverfront
  - 67 Access To and Within the District
  - 71 Urban Design
- 76 Implementation

## Maps

---

- 9 Context
- 7 Recommendations
- 13 Historical Development of the Riverfront
- 17 Existing Land Use
- 21 Circulation
- 25 Transit
- 30 Urban Setting
- 32 Image
- 34 Development Patterns
- 36 Penn's Landing
- 37 Development Opportunity
- 41 Traffic Volume
- 45 Environmental Factors
- 52 Planning Concept
- 53 Illustrative Site Plan
- 57 Development Phasing
- 61 Recommended Land Use
- 65 Recreation and Open Space
- 69 Transportation
- 72 Activity Centers
- 73 Connecting Elements
- 75 Urban Design Features

## Tables

---

- 3 Riverfront Plan, 1
- 15 Business Profile, 2
- 19 Land Use, 3
- 20 River Frontage, 4
- 56 Development Costs, 5
- 56 Development Phasing, 6





# Introduction

The Delaware and Schuylkill Rivers have shaped the urban form of Philadelphia for three centuries. These rivers have also shaped the City's economic growth by enabling Philadelphia to develop into one of the largest ports in the world, and have thus enabled the City to become a center for commerce, trade and manufacturing. Philadelphia could not have grown in the past without the Delaware and Schuylkill Rivers, and today the rivers are important to both the local economy and to the life style of Philadelphians. The rivers are an important source of employment and recreation for many residents and are a dominant physical feature of numerous neighborhoods.

The rivers and the waterfront constitute a major resource for the continued development of Philadelphia. Because of the need to manage this resource wisely, the Philadelphia City Planning Commission with the assistance of other agencies, groups and individuals, has been preparing a comprehensive plan for the Philadelphia riverfront. This plan will influence the use of riverfront land and will have a significant impact on the evolving urban form of Philadelphia over the next century. The Central Riverfront District Plan is a part of this comprehensive planning effort.

## The Riverfront Plan

The Planning Commission has long been concerned about the development of the riverfront and its importance to the City. The development of Penn's Landing was a recommendation of the 1960 Comprehensive Plan and has always been regarded as essential to the future development of Center City. In 1975 the staff of the Planning Commission conducted an inventory of riverfront land and a survey of riverfront users. The results of this study showed that approximately 1000 acres of riverfront land would become available for development during the next decade and that a major percentage of this land was controlled by the City and a few major users. It was further determined that, because of the port's significance to the City, it was essential to assess future port facility needs before a comprehensive riverfront plan could be prepared.

In 1978 the *Port Facilities Study* was completed. This was a joint effort of the Departments of Commerce and Finance, the Port Corporation, the Philadelphia Industrial Development Corporation and the Planning Commission. This study evaluated existing port facilities, projected future traffic through Philadelphia and made recommendations on new port facilities. The study recommended the expansion of both Packer Avenue and Tioga Marine Terminals. The study also recommended the retention and improvement of certain existing finger piers and evaluated five potential sites for a third container terminal that might be needed by the 1990s. The *Port Facilities*

*Study* projected port needs for the next two decades and is currently being used to schedule capital improvements.

The Planning Commission has also had a long standing interest in the development of the Delaware Riverfront adjacent to Center City.

While the Central Riverfront was the location of the earliest port activity in Philadelphia and for several centuries was a major shipping center, it no longer is needed or usable for modern port facilities. This has been apparent since the original plans for Penn's Landing were made over 20 years ago. The more recent *Port Facilities Study* confirmed that, with changes in shipping and cargo handling technology, the existing finger piers in the Central Riverfront are obsolete by modern port facility standards. The City in turn has encouraged the location of modern port facilities in the north and the south waterfront where appropriate and sufficient land is available. Thus, the City now has the opportunity to redevelop this historic area.

In planning for the redevelopment of this riverfront area, the Planning Commission has recognized the relationship of the Central Riverfront to Center City.

The expansion of Center City beyond the Delaware Expressway to the edge of the river can provide a bold new dimension to the vitality of its commercial core and the livability of its neighborhoods. The challenge is to guide this expansion in a way that both enhances and reinforces Center City.

A year ago the Planning Commission began a comprehensive effort to develop policies and recommendations for the riverfront. The focus of this work has been to balance the demand for the many uses competing for riverfront land. These uses include port facilities, industry, utilities, recreation, housing, retailing and transportation. It is believed that this balance can be achieved, but since decisions regarding riverfront land use have long term implications, these decisions must be carefully and fully considered.

Several goals have been established to guide the preparation of the riverfront plan:

*Promote port development.* Port activity is directly or indirectly responsible for the employment of 34,000 workers and provides annual

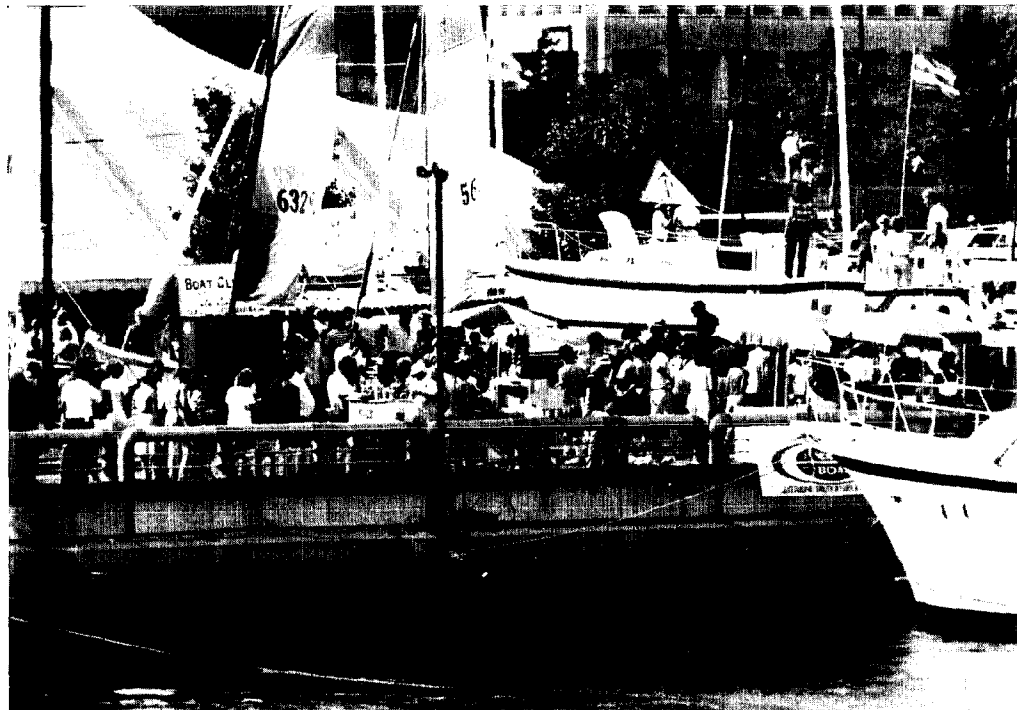
economic benefits of \$1.5 billion to the local economy. The port has shaped the economy of Philadelphia, and the maintenance of modern, competitive port facilities is essential to the continued strength of the local economy. The City must give priority to providing for and promoting the development of port and port related uses.

*Evaluate development opportunities for non-port related uses.* At one time the Delaware and Schuylkill River waterfronts were almost entirely devoted to port and port-related uses. Today, while a substantial portion of the waterfront remains in these uses, a significant amount of land is either supporting industries that no longer

need to be on the river or is available for development. The riverfront plan will evaluate the opportunities along the river for non-port related uses. The City must continue to support these non-port related industries since these industries constitute a substantial part of Philadelphia's economic base. The City, through the riverfront plan, should encourage the development on the waterfront of other non-port related uses where this does not conflict with the needs of the port.

*Foster residential use and recreational access.* In the past several decades, the quality of the water in both the Schuylkill and Delaware Rivers has improved substantially and will continue to improve. This has heightened the demand for recreational access to the rivers and has opened up new opportunities for residential development. Where appropriate, the City should encourage both of these uses as a way to continue to support the development of alternative housing forms and to provide adequate and diverse recreational facilities.

*Enhance the aesthetic and environmental qualities of the Delaware and Schuylkill Rivers.* The rivers and their edges are among Philadelphia's most important natural resources. The City is committed to the maintenance of those river areas which continue to have environmental importance and to the restoration of environmentally degraded river areas where possible. The rivers are a dramatically aesthetic feature of Philadelphia and the City should encourage the maintenance and enhancement of this amenity.



The planning process now underway for the riverfront has been proceeding on three levels. On the first of these levels, studies and functional plans are being developed to look at individual facets of the riverfront along the entire length of the Delaware and Schuylkill Rivers in Philadelphia. The *Port Facilities Study* which analyzed the City's future port needs is an example of a functional plan. Other functional plans include *Riverfront Industry Analysis*, *Environmentally Sensitive Riverfront Areas*, *Legal Implications for Development* and *Port Residential Zoning District*.

The second level of planning, incorporating the analysis and recommendations of the functional plans, are the district plans. For each of five riverfront districts, a detailed development plan will be prepared. Each plan will make recommendations on land use, zoning, urban design, transportation and other physical improvements for individual parcels of land. This report on the Central Riverfront District is the second district plan to be completed. The first plan, the South Waterfront District Plan, addresses the intense port-related area on the Delaware River between the Navy Yard and Reed Street.

The third level of planning is directed at key sites or opportunity areas. The most important of these currently being planned for are Penn's Landing and the foot of Washington Avenue. Other plans include North Bridge, Riverwalk, Cramp Shipyard-Port Richmond Area, Ft. Mifflin-Airport Area and 30th Street Station Area. For these sites, detailed development alternatives will be evaluated in order to make specific recommendations on reuse and development.

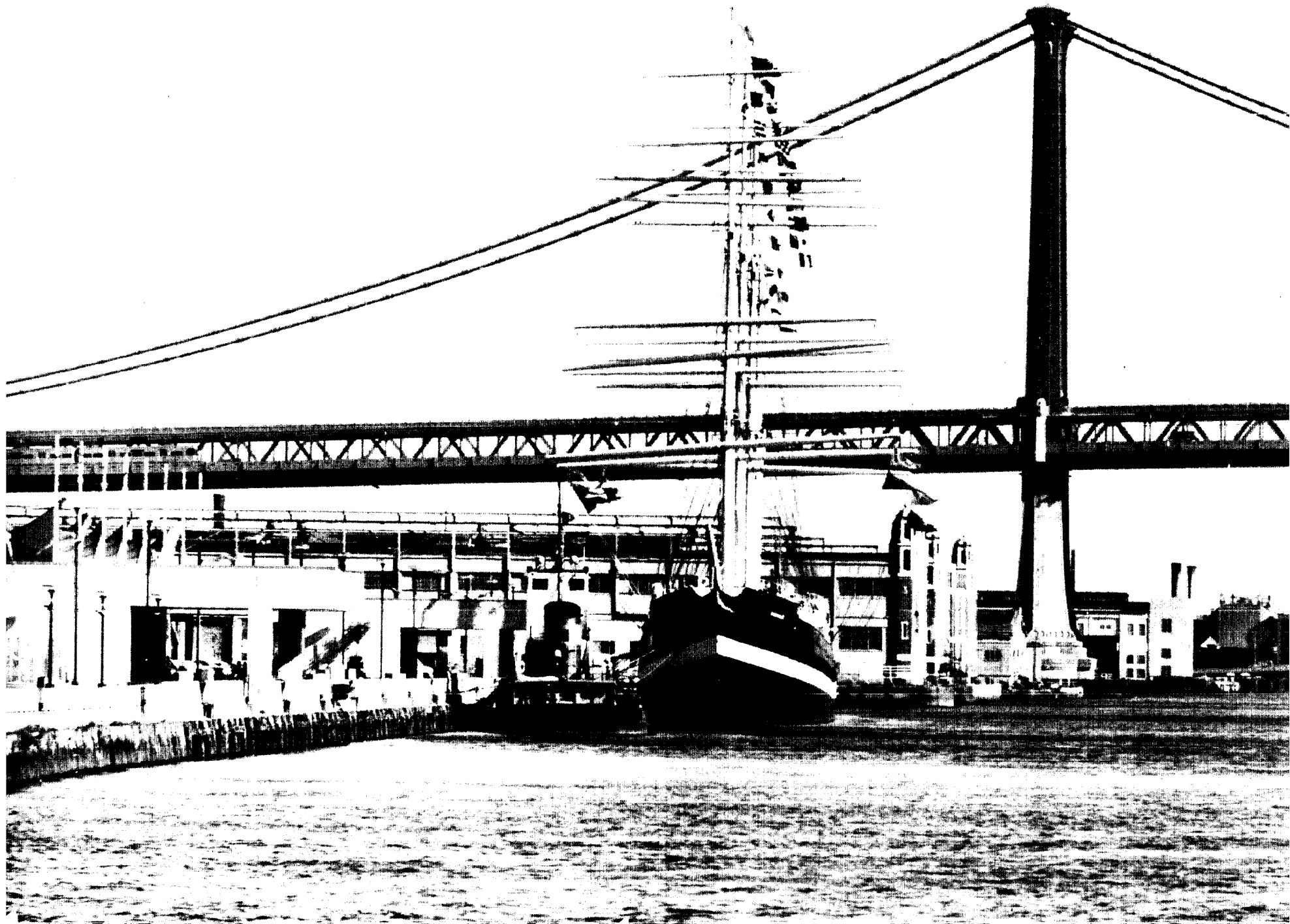
This third level will be further refined to include an evaluation of each private

development proposal which may be inconsistent with the overall plan. The Commission will consider variations from the plan where alternatives are more beneficial economically, where community interest may be better served, and where plan alternatives reinforce urban design objectives.

In Table 1, the functional plans and the district plans comprising the riverfront planning effort are listed along with their scheduled completion dates. Upon completion of the functional and district plans, a comprehensive plan encompassing the entire riverfront will be prepared.

**TABLE 1: RIVERFRONT PLAN**

<b>Studies and Functional Plans</b>	
Port Facilities Study	1978
Riverfront Industry Analysis	1981
Environmentally Sensitive Areas	1981
Legal Implications for Development	1981
Port Residential Zoning District	1981
<b>District Plans</b>	
South Delaware Waterfront	1981
Central Riverfront	1981
North Delaware Waterfront	1982
Lower Schuylkill Waterfront	1982
Upper Schuylkill Waterfront	1982
<b>Special Development Plans</b>	
Foot of Washington Avenue	1981
Penn's Landing	1981
North Bridge	1981
Riverwalk	1982
Cramp Shipyard-Port Richmond Area	1982
Ft. Mifflin-Airport Area	1982
30th Street Station Area	1982
<b>Comprehensive Riverfront Plan</b>	<b>1982</b>





# Summary

The Central Riverfront District is the focal point for the rebirth of public interest and excitement in Philadelphia's riverfront. Extending from Spring Garden Street to Reed Street, the district offers unparalleled opportunities for many varieties of new development. It was on the riverfront and nearby areas that the City's first commercial, residential and administrative centers were developed. Over time, the Central Riverfront became the center of port activity in Philadelphia. Today, with changes in shipping technology, the Central Riverfront is no longer critical to the City's port and thus can serve a different role, though one no less crucial to the future viability of the City. Where cargo ships once docked, opportunities now exist for new residential, recreational, cultural and commercial development.

The magnitude of the development opportunity in the Central Riverfront District cannot be overstated. Not since the creation of the Benjamin Franklin Parkway or the development of Penn Center has the City had an opportunity to significantly change the pattern of development in a portion of Center City. The Central Riverfront can become, as it was in William Penn's day, a part of the commercial, residential and institutional core of Philadelphia. The Delaware River, the reason for the location of Philadelphia itself, can be made once again an integral part of the City. As Philadelphia celebrates the three hundredth anniversary of its founding, it is fitting that new growth be again focused on the Central Riverfront where the City was first settled.

The Central Riverfront Plan has both physical and strategic components. Physically, the plan makes specific land use and urban design recommendations. Strategically, the plan provides a set of policies to guide future development in a manner that is consistent with overall City goals and objectives. The precise design and timing of actual projects however are left to the marketplace. At such time when the need arises and financing becomes available, specific development projects will occur.

The goal for the Central Riverfront is to create a place to live and work, to shop and dine, to be entertained and to have fun. This plan recognizes the magnificent amenity afforded by the Delaware River, and the development proposed by this plan is designed to take full advantage of this natural asset.

There are a number of major conceptual elements of the plan which follow directly from that goal.

*Development will be focused on the river.*

Penn's Landing will be the centerpiece of riverfront development in Philadelphia.

Existing finger piers will be developed as a mixture of housing, retailing, open space and parking.

The development of the Central Riverfront will be highly intense.

Access to the river will be a major part of all new development, capitalizing on the recreational opportunities of the river.

Linkages between the new riverfront development and the adjacent residential communities and Center City will be enhanced.

The potential for the Central Riverfront to become a unique attraction for tourists will be exploited.

The Central Riverfront Plan includes a number of specific recommendations. Penn's Landing will be developed as a major public attraction and center of activity. The major public space at Penn's Landing will be a riverfront plaza. This plaza will be the focus of cultural and recreational activities designed to attract tourists and visitors. It will also be the focus of retail and commercial uses such as restaurants, shops and markets designed to give the plaza and Penn's Landing its own special character and life. Parking will be provided to serve the visitors attracted to Penn's Landing. In addition to these public spaces, residential development will be encouraged and a commercial center created. New residential towers with 500 to 700 units of housing will be constructed. A hotel of 400 rooms with convention facilities and offices is also proposed for Penn's Landing. These commercial uses and the housing will be fully integrated into the public spaces of Penn's Landing to create one unified public and private development.

New residential communities north and south of Penn's Landing will be created. In both North Bridge and Penn's Landing South opportunities for the development of new housing will be created, the rehabilitation of existing piers and

buildings encouraged, and retail and commercial space to serve the new residents provided.

There are a number of opportunities for the construction of new housing. New high-rise residential development is recommended for Piers 25 North and 55, 56, and 57 South which lie at either end of the Central Riverfront. Approximately 750 housing units could be developed at the southern edge and 330 housing units could be built at the northern edge. A mixture of new townhouses, retailing, open space and parking is proposed for Piers 24, 13, 11, 9, 5 and 3 North and for Piers 28, 34, 35 and 36 South. On these piers a total of 920 housing units are recommended. Along Delaware Avenue in North Bridge existing vacant land should be developed with new townhouses or similar low-rise housing types. There is sufficient vacant or underutilized land to accommodate about 400 new housing units. The largest site for new housing development in the Central Riverfront District is in Penn's Landing South and includes the approximately 25 acres of underutilized or vacant railyards at the foot of Washington Avenue. With appropriate buffering from the industrial uses to the south, the site at the foot of Washington Avenue including the adjacent piers could be developed into a fully integrated residential development with retail to serve the new residents, with a small marina, and with public access to the riverfront. The number of housing units that could be developed on this site ranges from 1000 to 2450 units.

The rehabilitation of existing piers and buildings for housing will be encouraged. Piers 19 North and 30 South have existing pier sheds which could be adapted for residential use and would create about 260 housing units. Piers 38 and 40 have this same potential but are presently being

reserved for active port use and could only be considered for residential conversion when no further port-related use exists.

Several multi-story warehouses in the district could also be adapted for residential use resulting in the creation of about 600 housing units. Also a number of smaller three and four story industrial and commercial buildings exist along Front Street and its vicinity in North Bridge. These buildings should be rehabilitated where possible with ground floor retail and residential above.

The new residents of Penn's Landing, North Bridge and Penn's Landing South must be served with retail and commercial space. In North Bridge, a commercial center should be developed at Front and Callowhill Streets. This center would consist of rehabilitated storefronts along Front and Water Streets integrated with new retail development on Delaware Avenue south of Callowhill Street.

Approximately 65,000 square feet of retail space will be needed to serve North Bridge residents. In Penn's Landing South about 120,000 square feet will be required. The majority of this retail space will be provided at the corner of Delaware Avenue and Reed Street where a supermarket and other shops can be developed.

The public enjoyment of the riverfront will be enhanced by encouraging access and activity at the water's edge. A Riverwalk running along the bulkhead line from Penn's Landing South to North Bridge is a major recreational feature of this plan. The Riverwalk will connect all of the activity centers of the district, and pedestrian links from the adjacent communities to the riverfront will be enhanced. Three marinas will be developed to provide active recreation. One marina will be part of the

new harbor that will be the focus of Penn's Landing South and another marina to serve North Bridge will be located near Pier 12 North under the Benjamin Franklin Bridge.

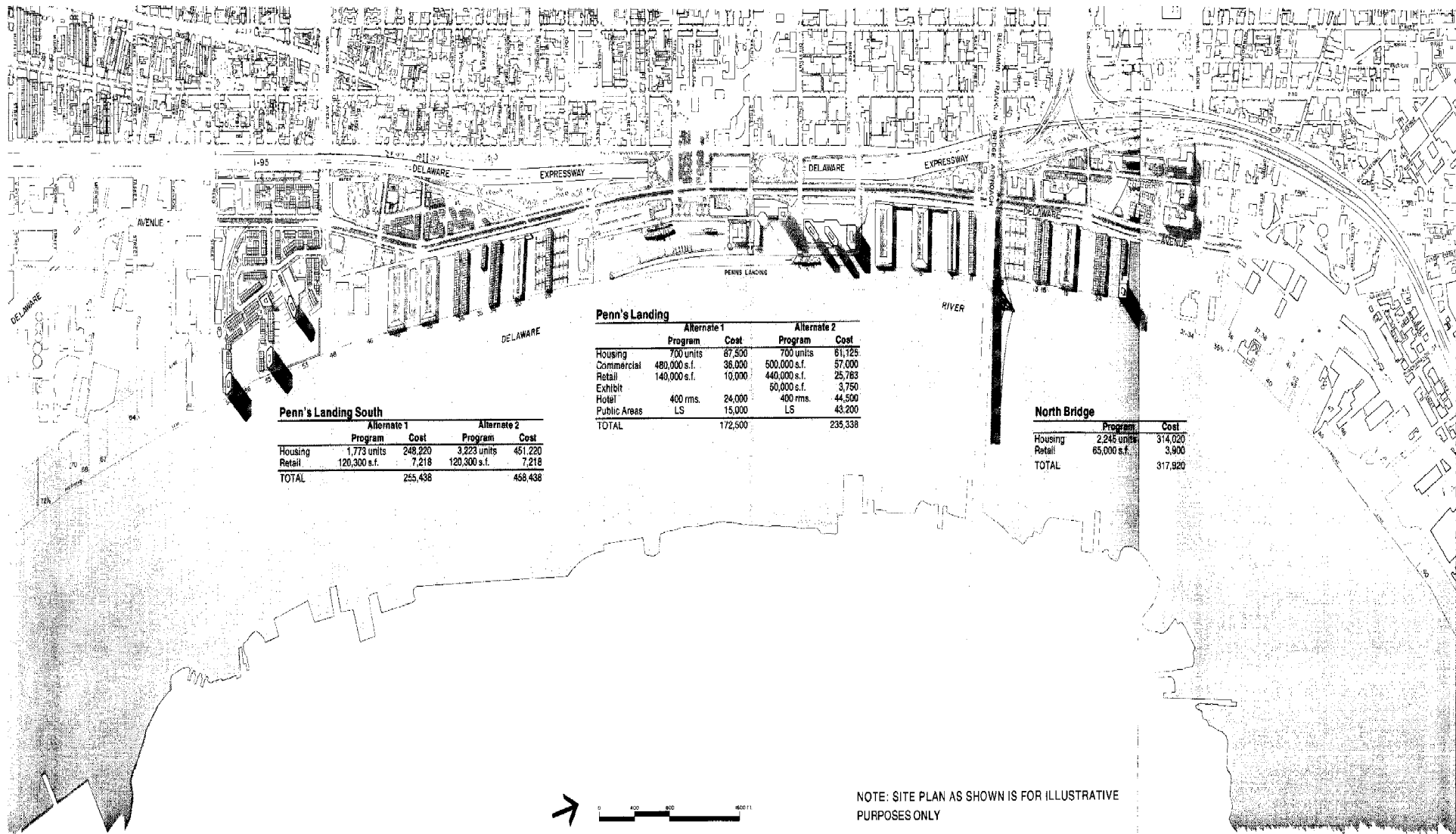
The development of the Central Riverfront will require improved access to and within the district. Improving access to the highway network serving the Central Riverfront requires the completion of the Vine Street Expressway and its connections to I-95. Access to I-95 must be improved. The northbound exit ramp near Queen Street should be completed and opened. The Morris Street southbound entry ramp should be opened only to traffic from Delaware Avenue. Other access ramps should be studied, and signs to Penn's Landing improved.

The access to adjoining neighborhoods and Center City should be improved. Callowhill Street between 2nd Street and Delaware Avenue should be made two-way, and the existing congestion at Delaware Avenue and Spruce Street relieved through minor changes to this intersection.

Access within the Central Riverfront must be improved to serve the proposed new development. The reconstruction of Delaware Avenue must be completed, and the Penn's Landing loop finished. A public parking garage will be needed to serve Penn's Landing and other measures to meet the increased parking demand adopted. These could include parking under I-95, changes in parking fees, and supplemental transit. Regular bus service must be increased and special transit service during special events instituted.

The Central Riverfront Plan proposes urban design standards intended to promote a high quality of new development. These urban design



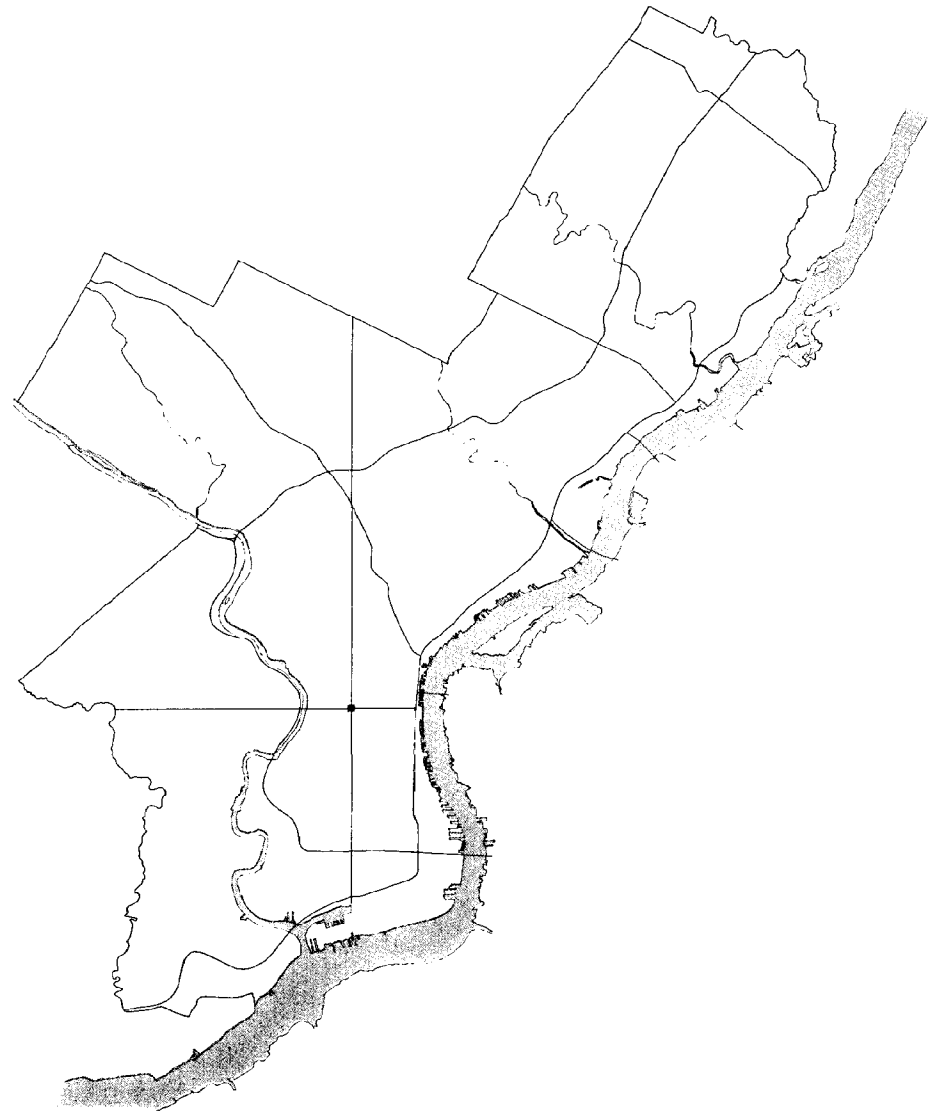


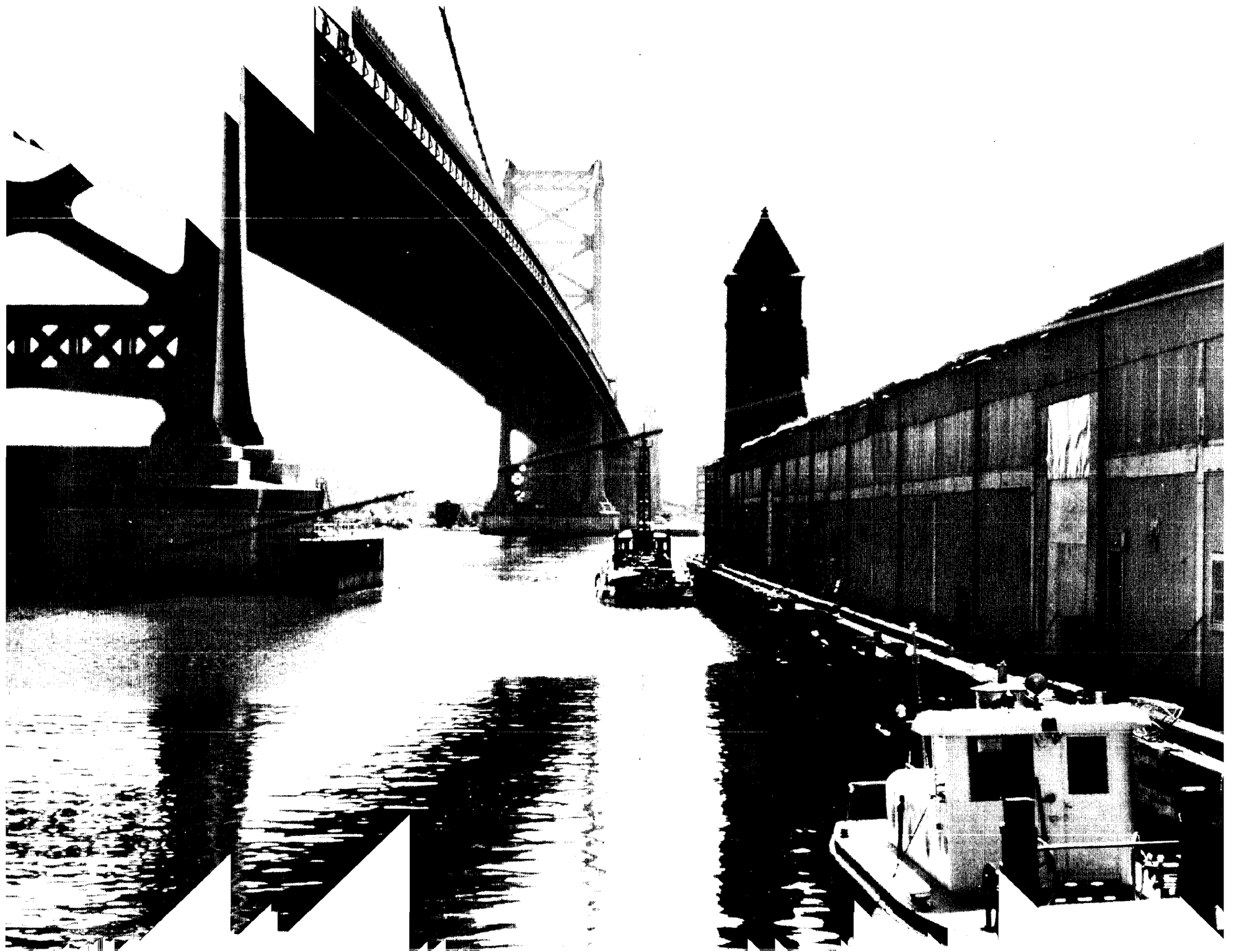
standards are intended to address a number of concerns including scale of development, orientation, rhythm, buffers, use of existing piers and facade preservation.

Eventually full development of the Central Riverfront will result in the construction of approximately 5000 to 6000 housing units and the creation of a major new commercial and retail center. It will take ten to fifteen years to complete and the total public and private cost will approach \$1 billion. Implementation of this plan will create over 3900 new permanent jobs.

## Context

---







# Existing Conditions

This inventory of existing conditions outlines the factors affecting planning and development issues in the Central Riverfront District. The history of the district establishes how the district's role as a center of commerce and trade has changed over the centuries and why the district is now in a transition period awaiting redevelopment. Businesses in the district were surveyed to determine the current level of economic activity and the extent to which commerce and marine trades are still active. Recognizing the need for a comprehensive data base from which planning could proceed, a computerized parcel-based inventory of the district's land was compiled and analyzed. Circulation of people and vehicles was also examined because as new homes, businesses and tourist attractions are built in the district congestion problems may arise which need to be addressed early in the redevelopment process. Environmental concerns are also prominent along the riverfront because water quality, flooding and aquatic habitats may influence the kind of development likely to occur and the governmental regulations with which developers will have to comply.

The Central Riverfront District is a 200 acre strip of land with an unparalleled history and location. Lying between Interstate 95 and the Delaware River, it stretches from Spring Garden Street on the north to Reed Street on the south. It was here at Penn's Landing that Philadelphia was born three hundred years ago. Here too lie the origins of the City's maritime trade and transport industries on which the economic vitality and growth of Philadelphia were based.

Although the focus of the City's port activities has shifted both to the south and north along the Delaware River, the unique locational advantage of the Central Riverfront remains. Situated adjacent to Center City and served by I-95 and the Benjamin Franklin Bridge, the district is provided with excellent city-wide and regional access. This advantage, together with the historic character of the area, has made the Central Riverfront the focal point for the rebirth of public interest and excitement in Philadelphia's riverfront.

The Central Riverfront is made up of three distinct sub-areas: North Bridge, Penn's Landing and Penn's Landing South. These areas are linked by Delaware Avenue, the major internal thoroughfare. North Bridge, dominated by the Benjamin Franklin Bridge, contains a number of finger piers, most of which are vacant or partially demolished. The landside area to the west covers approximately 40 acres. Penn's Landing is in the heart of the Central Riverfront District and is where the sailing ship "Welcome" carrying William Penn first docked in 1682. Landfilled during the 1960s, this 24 acre site is presently used for public open space, but a detailed, mixed-use development plan for this site is being prepared. Penn's Landing South has a varied physical setting. On the river side of Delaware Avenue there are a number of vacant but, for the most part, structurally sound finger piers. At the foot of Washington Avenue lies a 30 acre tract of underutilized railyards and obsolete piers. Old Swedes' Church marks the area west of Delaware Avenue, and includes a block of cleared land and several blocks of low rise residential and commercial structures.

## Historical Perspective

When William Penn disembarked his ship "Welcome," he found a small settlement consisting of a handful of Swedish and Dutch fur traders; a band of peaceful Indians, the Leni Lenape; and one tavern, the Blue Anchor Inn. Although the sparseness of this frontier may have seemed inhospitable, it was the chief reason why Penn chose this site for his *holy experiment*. His first inclination had been to locate Philadelphia further south at Upland (now Chester). However, Penn, owner of all of Pennsylvania through a charter given him by James II of England, felt compelled to "purchase" property from existing landholders, and Upland was already a town of several hundred persons.

The importance of the riverfront was an early concern to Penn. In a letter to the Free Society of Traders in 1681, he wrote of his plans to locate his great town where *it is most navigable, high, dry and healthy; that is, where most ships may best ride of deepest draught of water, if possible to load or unload at the bank or key side, without boating or lightering of it.*

Philadelphia was the first city in the New World planned from its inception with a grid pattern. Following Penn's instructions, surveyor Thomas Holme created a plan for Philadelphia in 1681 which had a network of streets intersecting at right angles. The earliest printing of Holme's plan shows the grid stretching from the Delaware River to the Schuylkill River, bounded by Valley Street on the north and Cedar Street on the south. Today, these streets bear the names Vine and South Streets, and the Delaware Riverfront

between the two is the heart of the Central Riverfront District.

The plan also shows the location of Dock Creek, a small basin at the foot of Spruce Street. This is where Penn first landed. The Dock seemed a natural selection to become the new city's center. It provided a snug harbor for small vessels, and with the Blue Anchor Inn at its side, the Dock was already the focal point for public meetings. At that time, the Delaware Riverfront was not used for the mooring of boats because deep banks, into which early settlers had dug out caves for their homes, fronted the river. Within 5 years, however, the banks were cut down on order from the town council. In 1690 the first wharf into the Delaware River was constructed at the foot of Mulberry Street, which today is Arch Street, and here the first passenger ferry service was instituted in 1695.

A major feature on the original Holme plan was that the land between Front Street and the Delaware River was not divided into lots to be sold for private use, but was reserved as a commons for public benefit. Its value as private property was apparent, however, and agents for Penn intended to sell certain lands then under lease along the river. But the town council objected, and in 1701 the Charter by which Philadelphia became a city granted that the riverfront land in dispute *be left open and common for the use and service of said city*. Penn retained several portions of the waterfront for his own benefit until 1764, when his son Thomas gave them to the city.

To the south of Penn's new city, a Swedish settlement thrived. In 1698, its people replaced their 30 year old log cabin church with a new Gloria Dei Church of brick and mortar and a beautiful white steeple. Old Swedes' Church stands today as a landmark of the Penn's Landing South



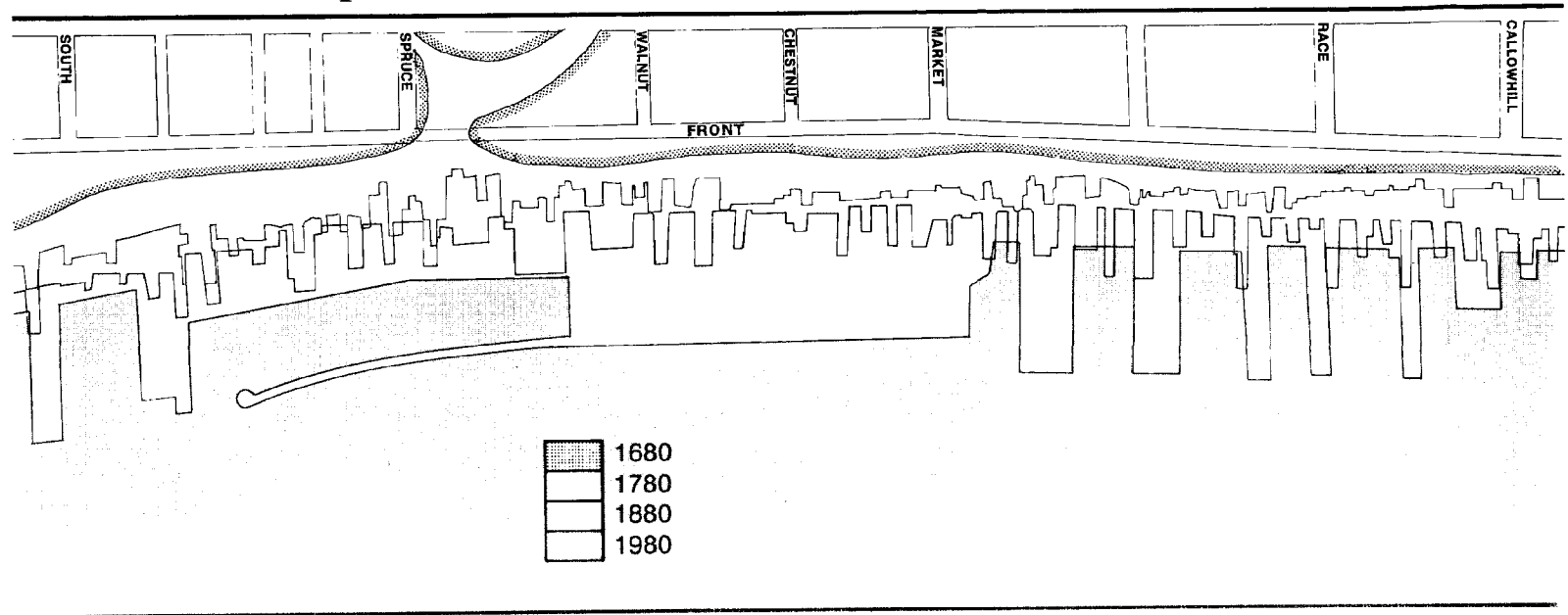
portion of the Central Riverfront.

Growth of Philadelphia's port was rapid in the first part of the eighteenth century, and important issues of public management had to be faced. In 1704, the common council adopted a regulation to keep the strip of land connecting the wharves clear for moving goods rather than storing them. In 1706, the first levy was issued for storing wood on wharfs. Duties for docking at wharfs were instituted in 1710 to provide for *Building and Supporting of Ye Public Wharfs*. These fees supported the expansion and extension of port facilities. A new administrative procedure to maintain wharfs was started in the early 1700s. Petitioned by private landowners along Front Street and recognizing its failure to adequately maintain all its

riverfront structures despite the tax it collected to do so, the council decided to lease out certain wharfs as well as land for the building of new wharfs. A number of enterprising citizens quickly took up the challenge, and a listing of people leasing wharfs in 1750 contains more than 50 names. The *Historical Development* map illustrates the effect of port growth on the shape of the river's edge.

The growth in trade in Philadelphia which followed the building of wharfs and piers was the most rapid in the colonies. By 1750, Philadelphia had surpassed New York in port trade, and before the start of the Revolutionary War, Philadelphia had supplanted Boston as the preeminent port in the country. Trade at that time had a pattern where wheat, flour, corn, cheese,

## Historical Development of the Riverfront



butter, staves and wood shingles were sent to the West Indies and exchanged for rum, sugar and Spanish gold. These commodities, in turn, were brought to England to pay for manufactured goods sent to America.

During the Revolutionary War, there was little development along the riverfront outside the City borders at Vine and South Streets. Following the war, there was a new period of expansion, and for the next fifty years, port commerce flourished. A number of landings were built south of Washington Avenue and well north of Spring Garden Street.

Two events following the Revolutionary War were significant. In 1786, the first steamboat, built by John Fitch, was tested on the Delaware River. Before long, steam boats became the dominant mode of water

transportation, and new piers had to be built to accommodate these larger ships. In 1800 the first Navy Yard of the United States was opened at the foot of Federal Street. Its two towering shiphouses were the most conspicuous buildings on the riverfront, and the facility was the area's largest employer. Until moved to its present site at League Island in 1875, the Old Navy Yard was a major physical and economic force along the Central Riverfront.

The period following the war can also be characterized as the heyday for free enterprise. Shipping magnate and navigator Stephen Girard became the country's first merchant millionaire. Owner of 18 vessels and a number of wharfs and warehouses along the Delaware Riverfront, Girard was actively involved as Port Warden in all aspects of riverfront

development. In his will, Girard provided a trust fund to *lay out, regulate, curb, light and pave a passage or street fronting on the Delaware River to be called Delaware Avenue.*

In 1825, an event occurred which foreshadowed the time when Philadelphia's port would lose its place as the nation's foremost port. That event was the construction of the Erie Canal, which opened up a large and fertile hinterland to New York City's harbors.

By 1835, the impact of the Erie Canal was being felt, and measures were debated to improve waterfront conditions and make Philadelphia more competitive. Delaware Avenue was constructed, becoming the first public street to link the various docks of the Central Riverfront. More importantly, rail lines were built to the

riverfront. In 1834, the Delaware and Schuylkill Railroad built a line directly to its wharf on Willow Street, and in the following year, the Philadelphia, Wilmington and Baltimore Company extended its railroad to the riverfront at South Street. These improvements did not overcome the advantage of the Erie Canal, however, and Philadelphia continued to lose some of its shipping trade to New York.

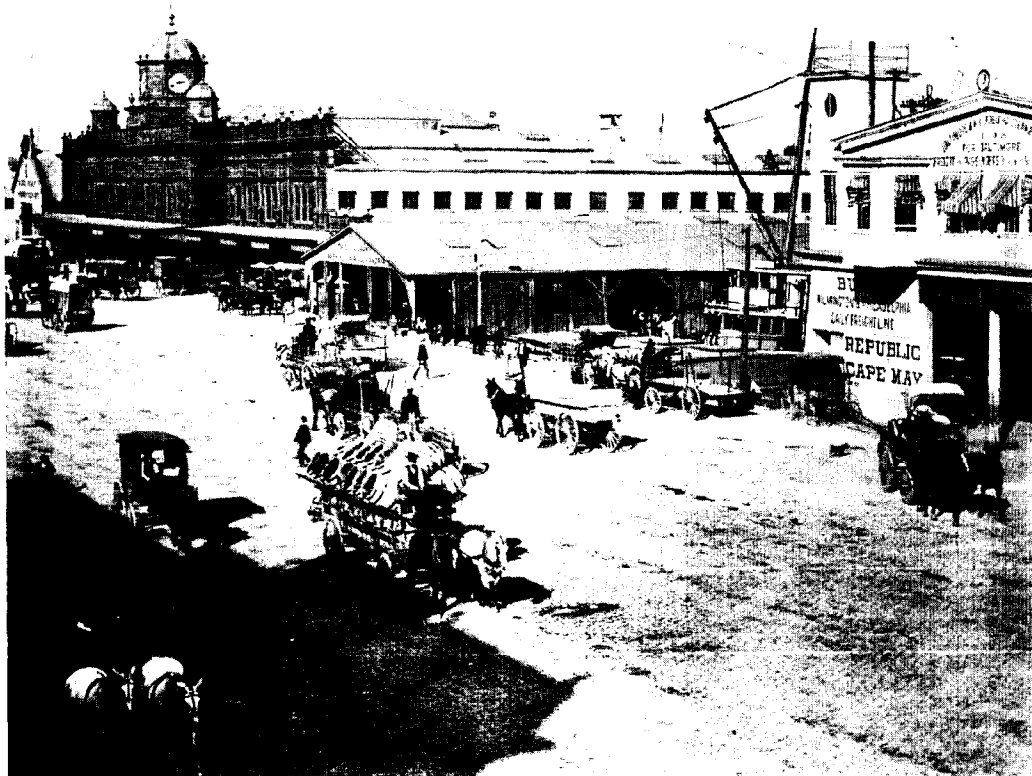
Another effort to revitalize the port was

begun in 1878 when a long-term plan was drawn up to improve riverfront conditions. The plan called for the construction of a rail line along Delaware River connecting all wharfs and piers. The Philadelphia Belt Line Railroad was established for this purpose in 1889. The plan also recommended the removal of Smith and Windmill Islands, which obstructed traffic in the Delaware River. These were removed in 1893. In 1896, Delaware Avenue experienced a major renovation; it was widened to a minimum dimension of 50

feet, and the bulkhead line was relocated further into the river where it remains today.

The year 1907 marks the beginning of the modern era for the port of Philadelphia. In that year, the Board of Port Wardens, which had controlled harbor activities since 1766, was replaced by the Department of Wharves, Docks and Ferries. The new department was created with powers to condemn land needed for port purposes and to modernize the aging pier facilities. It did its job well. In 1906, shipping for the port of Philadelphia totalled 17 million tons; by 1925, after a flurry of new construction, tonnage was increased to 37 million. The new department built relatively large and modern 500 foot long piers such as 19, 3 and 5 North and 38-40 South within the Central Riverfront District, but the more modern 1000 foot long piers, Piers 78 through 84 South, were built in the South Delaware Waterfront District.

During the middle of the twentieth century, however, there was a contraction of marine commerce in the Central Riverfront District. In 1950, there were 44 finger piers in active port use along the district. By 1970, 19 piers had been demolished and landfilled, 16 which were replaced by Penn's Landing and 3 which became the site for the East Central Incinerator. Today, only 3 piers continue in port-related use, serving as docking space for tug, police and fire boats. Two other piers are in non-port related use, Pier 30S which was converted to an indoor tennis court and Pier 27N which is the City's storage lot for impounded vehicles. The remaining 20 finger piers lie vacant. For eight of these, the steel superstructure exists, whereas the sheds of 12 piers have been demolished, leaving either undeveloped cleared decks or rotting timber piles.



Four major construction projects mark the end of the Central Riverfront's primacy as the center of port-related activity in Philadelphia. These projects involved site preparation for Penn's Landing, the construction of two large container terminals outside the district, and the construction of I-95.

To create the site for Penn's Landing between Piers 3 North and 28 South, the intermediate piers were demolished. In addition, landfill was carried out to create a boat basin, breakwater and developable areas in this 3100 foot long site.

Outside the district, two large container terminals were built—Packer Avenue Marine Terminal to the south and Tioga Marine Terminal to the north. Equipped with the latest in cargo handling technology, these facilities were built in response to a rising demand for containerized cargo. Correspondingly, there was a decreased demand for break-bulk cargo which had been handled at the finger piers in the Central Riverfront District. The more modern finger piers in the South Delaware Waterfront now accommodate the present demand for break-bulk cargo. As a result of these changes in demand, many finger piers became vacant.

The construction of I-95, the Delaware Expressway, changed the face of the Central Riverfront. For the most part, this highway followed a line through a number of older warehouses which served the port. With the decline of shipping in the area, these structures were expendable, and their demolition did not so much expedite this decline as reflect it. The expressway was not completed until 1980, and it is viewed as a benefit to the district since it provides city-wide and regional access for a riverfront newly reopened to public use.

## Economic Profile

In the Central Riverfront District there are 23 firms which employ 466 persons. The Planning Commission conducted a survey of district businesses to ascertain the type of work performed, the perceived importance of a riverfront location and the future plans of each firm.

This survey indicated that more than 85 percent of the employment is concentrated in three industrial activities: marine services, which includes towing and mooring of boats as well as ship repair; wholesale trade and warehousing, including several food distributors and one large refrigerated warehouse; and food processing. Recreation, the next highest employment category, involves a riverfront tour company and Pier 30 South which has been converted to an indoor tennis court facility (see Table 2).

In responding to the question of whether a riverfront location was important to their operation, all 6 marine service businesses responded that such a location was essential. The responses for the remaining 17 firms were mixed; while 8 respondents felt that such a site was essential or

somewhat important, 8 considered it unimportant, and 1 found its present riverfront location to be a problem.

When asked about their future plans, eleven firms indicated plans to expand their operations at their present location, whereas 6 others said they would continue operations at their present site without expansion. Four businesses have plans to move outside of the district, and no firm foresaw a discontinuance of operations.

Several conclusions can be made from this analysis. The first is that the Central Riverfront is no longer the hub of port activity in Philadelphia. While there is certainly employment in marine services, not a single person is employed in marine trade or transport. No port freight counts the Central Riverfront as its origin or destination point. The 44 finger piers which were in active shipping use in 1950 have been reduced to 3 piers in marginal, port-related use.

The principal reason for this situation is clear. Break-bulk cargo, for which the finger piers were built, has been supplanted by container shipments as the primary form in which goods are transported by

**TABLE 2: BUSINESS PROFILE**

Business Type	Firms	Employees	Building Area
Marine Services	6	214	145,000
Wholesaling & Warehousing	7	127	354,000
Food Processing	3	56	16,000
Recreation	2	42	400,000
Professional Services	2	12	13,000
Other	3	15	5,000
<b>TOTALS</b>	<b>23</b>	<b>466</b>	<b>933,000</b>

SOURCE: Philadelphia City Planning Commission



ship. The facilities which handle container shipping in Philadelphia, Tioga and Packer Avenue Marine Terminals, are located outside of the Central Riverfront District. The break-bulk cargo that does get transported to and from Philadelphia does so out of the more convenient, longer and recently modernized Piers 78, 80, 82 and 84 on the South Delaware Waterfront. At present, the capacity of these piers is greater than the demand from break-bulk shippers. This suggests that a sudden demand for Central Riverfront pier space would be unlikely unless there is an increase in the overall level of break-bulk activity in Philadelphia. That possibility does exist in the short term, however, and piers 19 North and 38-40 South in particular could handle such cargo in that event. Over the longer term, the trend toward container shipments is expected to continue. As it does, the potential for the Central Riverfront to recapture a significant share of port activity will diminish.

The disappearance of shipping as the primary economic force in the Central Riverfront District has several implications. For one, a pattern of disinvestment in supporting services and facilities has begun. In the survey of Central Riverfront business, concern was expressed repeatedly as to the poor rail service, the disrepair of highways and the deterioration of piers in the area. It appears that economic activity in the Central Riverfront has fallen below the threshold level needed to sustain the district's support infrastructure. In short, maintenance of rail lines, roads and piers disappeared along with port shipments.

A second implication is that those port-related activities which need to be located close to the facilities they serve can find suitable sites outside the Central

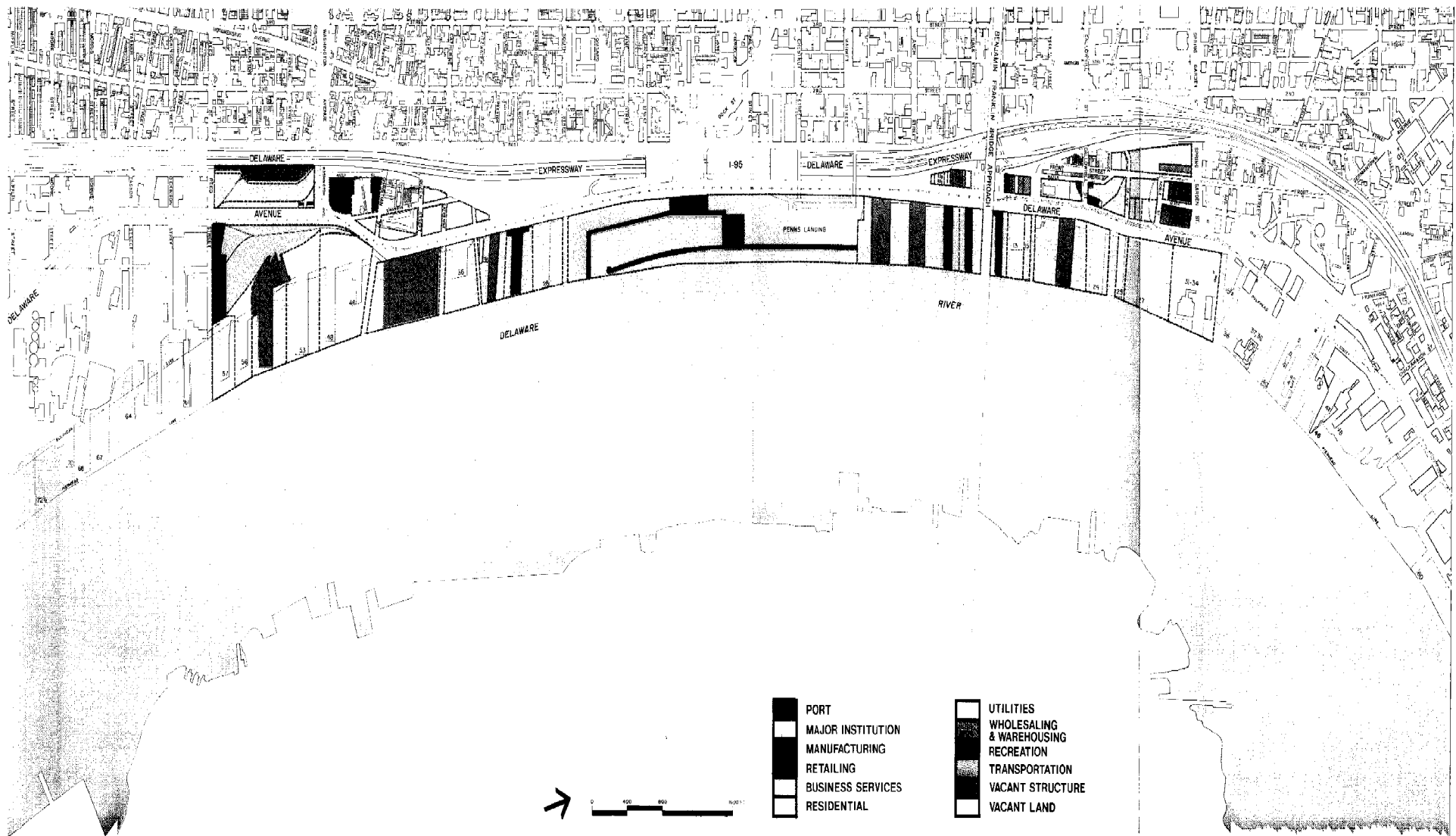
Riverfront District. For those firms who plan to move, the survey showed that the desired destination was elsewhere along the riverfront. This points to the conclusion that when businesses responded that a riverfront location was essential to their operation, they did not necessarily mean that a Central Riverfront location was essential.

In summary, the economic character of the Central Riverfront District can be described as one of decline of certain activities and of transition. Port activity has left the Central Riverfront, and few industries or employees remain. The importance of new economic activity, represented by Penn's Landing, is clear. Change has begun, and care is needed to guide future development in a manner that will not unduly impact existing business but will provide for growth and revitalization of the untapped resources of the Central Riverfront District.

## Land Use Analysis

The Central Riverfront District contains 200 acres of land. In order to provide a sound basis for planning, a detailed inventory of all parcels in the district was assembled and computerized. This inventory contains data on existing land use, zoning, ownership, assessed value and other important information. In addition, a thorough field survey of land use was conducted, resulting in the *Existing Land Use* map, containing 13 categories of land use. The inventory reveals that there are 141 acres of land divided among 155 parcels and that a remaining 59 acres are taken up by streets and highways. The survey and mapping showed that four land use categories dominate in the district—transportation, undeveloped land, land with vacant structures and mixed use development. Each of these categories includes a substantial amount of land which is available for development or could be available in the near future.

Transportation is the category with the largest land area. Thirteen of the 32 acres devoted to transportation are in Conrail's Reed Street Rail Yard. Formerly, this facility served the now vacant finger piers at the foot of Washington Avenue as well as the Amstar Corporation sugar refinery just south of Reed Street. Today, this railyard is underutilized and could become a site for major redevelopment. Across Delaware Avenue to the west is situated the 6 acre property that once was Penn Central's Federal Street Rail Yard. This site is also open to the possibility of reuse, as it is seldom used. The same is true for the smaller Reading Yard on Delaware Avenue at Noble Street. Recently an option to develop half of this four acre site was taken with the expressed intention of constructing new housing. The fourth



# EXISTING LAND USE

**TABLE 3: ACREAGE AND NUMBER OF PARCELS  
BY LAND USE CATEGORY**

Land Use	Acres	% Total	Parcels	% Total	Acres Per Parcel
Manufacturing	2.6	1.8	4	2.6	.7
Transportation	31.7	22.5	22	14.2	1.4
Port	4.2	3.0	3	1.9	1.4
Utilities	7.8	5.5	2	1.3	3.9
Retail	.1	.1	1	.6	.1
Wholesale & Warehousing	5.7	4.0	8	5.2	.7
Business Services	2.0	1.4	14	9.0	.1
Institutional	1.4	1.0	1	.6	1.4
Recreation	4.3	3.1	8	5.2	.5
Residential	3.3	2.3	9	5.8	.4
Undeveloped Land	28.8	20.5	44	28.4	.5
Vacant Structures	25.0	17.8	38	24.5	.7
Mixed-Development	23.9	17.0	1	.6	23.9
<b>TOTAL</b>	<b>140.8</b>	<b>100.0</b>	<b>155</b>	<b>100.0</b>	<b>.9</b>
Riverfront Parcels	85.7	60.0	22	14.2	3.9
Non-Riverfront Parcels	55.1	40.0	133	85.8	0.4
<b>TOTAL</b>	<b>140.8</b>	<b>100.0</b>	<b>155</b>	<b>100.0</b>	<b>0.9</b>

SOURCE: Philadelphia City Planning Commission



largest transportation use in the district is the 2 acre Hertz Rent-a-Truck property.

The nearly 29 acres of undeveloped land consist of a number of formerly active finger piers. The sheds of fourteen such piers are now demolished. Whereas some retain usable deck areas, many are marked simply by rotting timber piles. This land use category is divided into 44 parcels, the largest number of parcels of all categories.

Land containing vacant structures includes 8 finger piers distributed along the length of the Central Riverfront, from Pier 19 in the north to Pier 55 in the south. There are also a number of smaller, vacant commercial buildings, many of which are located on north Front Street.

The mixed-use development designation in the Central Riverfront refers to Penn's Landing, a single 24 acre landfilled parcel which has had \$35 million of site improvements in preparation for large-scale recreational, residential and commercial development. At present, this site is used as public open space and includes an esplanade, a restaurant on the converted sailing ship *Moshulu*, a heliport, and a small marina where the ship *Olympia* and submarine *Becuna* are permanently docked and open to public tours.

Three of the four major land uses in the district—that is, all except transportation—dominate the river frontage as well as total acreage. The land uses of parcels fronting the Delaware River are listed in Table 4. The frontage of vacant or demolished piers and Penn's Landing together add to over 8200 linear feet or more than 75 percent of the two mile long Central Riverfront.

Among the minor land uses in the Central Riverfront District, several deserve special

**TABLE 4: RIVER FRONTAGE BY  
LAND USE CATEGORY**

Land Use	Frontage (Feet)	% Total
Vacant Structures	4025	36.5
Mixed Development	3310	30.0
Underdeveloped Land	1862	16.9
Utilities	565	5.1
Transportation	520	4.7
Port	410	3.7
Recreation	330	3.0
<b>TOTAL</b>	<b>11,022</b>	<b>99.9</b>

SOURCE: Philadelphia City Planning Commission

mention. The 3.3 acres of residential land near Old Swedes' Church form a pocket of new housing where warehouses formerly stood. Although it is only two percent of the district's total land, this site is representative of the strong trend towards residential redevelopment.

Port-related service industry is a land use which, although small (4 acres), will remain important in the short run. This category includes Piers 9, 11 and 12 North, which provide docking and repair services for tug, fire and police boats. In addition, Piers 38 and 40 South have the potential to be reopened for port use.

Another industrial use which has a vital function for the near term future is the utilities category. This refers to the City's East Central Incinerator, occupying 8 acres of land at the northern end of the district.

## Circulation

The Central Riverfront District is served by I-95 and by several major regional access routes, giving the district a potential for excellent highway access. Under existing conditions, however, this potential is not realized. Access points are limited; several key connections are incomplete; and poor signage prevents the most effective use of the existing access points. In addition to limitations on access, another important factor affecting Central Riverfront District circulation is traffic congestion in areas of Center City immediately west of I-95.

### Highway Access

Regional access to the Central Riverfront District is provided by I-95 (the Delaware Expressway), the Benjamin Franklin Bridge and Vine Street via Race Street (see *Circulation* map).

The major connections between Center City and I-95 to the north are located in or adjacent to the district. These are the exit ramp to 2nd and Callowhill Streets and the Race Street entry ramp.

Getting to I-95 northbound is more difficult from the riverfront than from Center City. An entry ramp from Delaware Avenue at Summer Street is closed because it feeds into the Race Street ramp, and the volume of traffic coming from Race Street is too high to permit a merge of additional traffic from Delaware Avenue. There is a northbound entry ramp, however, at Lombard Street.

Central Riverfront connections to and from I-95 south are considerably farther away than the connections to I-95 north. There is an exit ramp from I-95 at Morris Street and at this same location there is a southbound

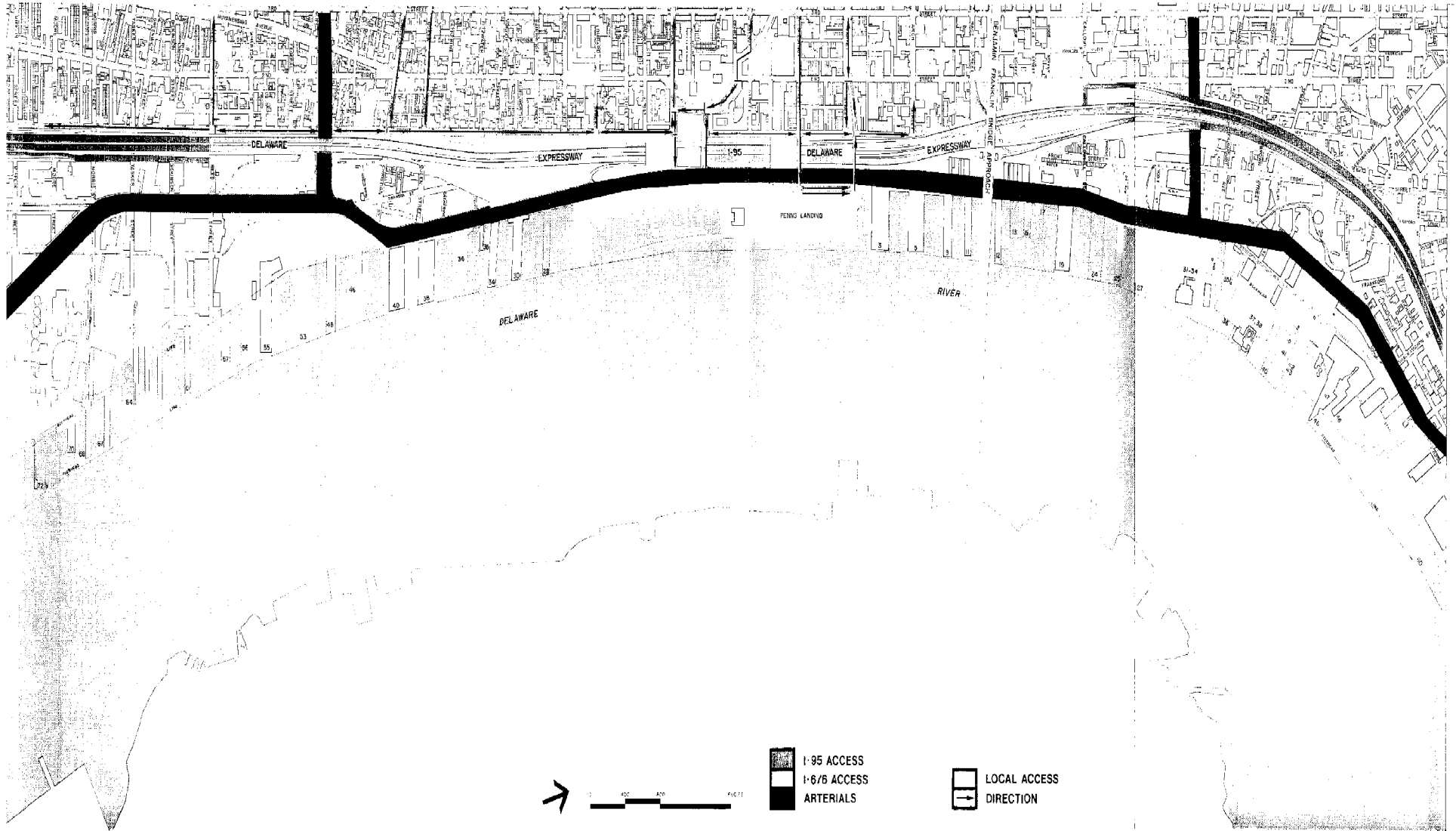
entry ramp which was constructed but never opened due to community opposition. Drivers going from the riverfront to I-95 southbound must use the entry ramp at Front Street south of Oregon Avenue, a distance of approximately 2-1/2 miles from Market Street. Construction and opening of another exit ramp from south I-95 in the area between Bainbridge Street and Queen Street has also been delayed because of community opposition.

Connections between the Central Riverfront District and New Jersey are provided by the Benjamin Franklin Bridge. New Jersey access is also provided by the Walt Whitman Bridge in the South Delaware Waterfront District.

Many drivers come to the Central Riverfront District via Vine Street (I-676) and Race Street. Vine Street traffic is diverted onto Race Street at 6th Street. Together, these two streets carry traffic to the district from Center City and the Schuylkill Expressway (I-76).

The difficulty with this access is that the riverfront-destined traffic must share a portion of the route with heavy volumes of traffic going from Vine and Race Streets to I-95. During the afternoon peak period, the volume of I-95 destined traffic on Race Street is so high and the resulting congestion so severe that alternative routes are preferable. At other times, however, Vine and Race Streets form a key access route to the district. In the other direction, getting from the riverfront to Vine Street westbound is inconvenient, requiring circuitous travel through local streets.

Other important streets used to get to the district are Spring Garden Street, Washington Avenue, and Market and Chestnut Streets. Spring Garden and



# CIRCULATION

Washington are both major arterials serving crosstown traffic to the riverfront. Spring Garden Street is particularly important for westbound traffic because of the scarcity of westbound connections in the northern part of the district. The only streets connecting under I-95 between Spring Garden and Market Streets are Race and Callowhill Streets, which are one-way eastbound in this area.

Market and Chestnut Streets form a one-way pair with access ramps over I-95 to Penn's Landing. An elevated loop connecting these two ramps for easy return to Center City is planned but not yet constructed. Using Market Street to leave the riverfront is inconvenient for drivers coming from the northern part of the riverfront, since they must travel south to Walnut Street and make a U-turn there in order to get to the Market Street ramp. Other streets providing local access to the Central Riverfront District are Dock, Spruce, Queen, Christian and Reed Streets. Circulation within the Central Riverfront District is concentrated on Delaware Avenue. Delaware Avenue is a very wide street (approximately 100' cartway) shared by vehicular and rail traffic. The section between Vine and Catherine Streets was reconstructed in recent years and is in good condition. South of Catherine Street, however, portions of the road are in very poor condition, requiring reconstruction, striping and signalization. In addition, median cuts are often not well-placed to provide access to development parcels. An example of this is at Piers 3 and 5, where the median blocks access to the piers from southbound lanes and from Race Street.

### Traffic Flow

There are very few traffic-generating land uses now in the Central Riverfront District. The only important exception is Penn's

Landing, where weekend activities sometimes attract large numbers of people and cars. With few exceptions, traffic flows smoothly within the district.

Delaware Avenue, Spring Garden Street and Washington Avenue all have adequate capacity to accommodate current traffic volumes. As mentioned before, Race Street carries very high volumes of vehicles headed for the entry ramp to I-95 northbound. Similarly, in the morning, the intersection of Callowhill and 2nd Streets is crowded with commuters getting off I-95.

Because access to and from the riverfront

so often involves the use of local streets in the area west of I-95, traffic flow on these streets must be considered in assessing Central Riverfront circulation, even though they are outside the designated study area. Riverfront traffic will affect and will be affected by traffic conditions in the eastern sections of Old City, Society Hill, Queen Village and Pennsport. Several of the streets in these areas, particularly Front, 2nd, Spruce and South, suffer frequently from traffic congestion, especially at night and on weekends when entertainment activities and tourist attractions bring many visitors. The volume of vehicles is not, in most cases, a



problem in and of itself, but the narrow streets, discontinuities in flow, illegal parking and conflicts with pedestrians all combine to create traffic congestion.

In general, the neighborhood streets west of I-95 are not congested during the commuter peak hours, but there are afternoon peak period backups on Front and Spruce Streets feeding to Delaware Avenue. These backups could be reduced through some minor traffic engineering improvements and changes in parking regulations.

### Transit

Extensive transit service exists near the Central Riverfront District but, for the most part, this service does not penetrate the district itself. At one time there was a bus along Delaware Avenue, but this was discontinued due to lack of use. North-south bus service is provided on 2nd and 3rd Streets, and there is trolley service on 4th and 5th Streets.

East-west bus service is provided on most of the important east-west streets (see *Transit* map). East-west trackless trolley service is provided on Tasker and Morris Streets, just south of the Central Riverfront. Few of the east-west routes extend east of I-95. Only the Spring Garden Street bus goes all the way to Delaware Avenue, while the Tasker-Morris trolley bus line terminates at Water Street.

The Market-Frankford Subway-Elevated Line has two stops near the Central Riverfront, one at 2nd and Market Streets and one in the I-95 median at Spring Garden Street. The northeast entrance to the 2nd Street subway station is immediately adjacent to the sidewalk on the Market Street bridge to Penn's Landing.

## Environmental Factors

The Delaware River is the primary source of water for Philadelphia residents and businesses. The City withdraws daily about 220 of the River's 7500 million gallons of flow, drawing and filtering the water at the Torresdale Filtration Plant 8 miles upriver of the Central Riverfront District and pumping it to the district through large water mains capable of supplying all industrial and residential water needs.

The Delaware River also serves the City as a recipient of Philadelphia's wastewater. All sewage generated within the Central Riverfront District is carried by sewers to the Southeast Sewage Treatment Plant located south of the Walt Whitman Bridge. After receiving a primary level of treatment, the wastewater is discharged to the River.

The Delaware River is seriously polluted in the vicinity of the Central Riverfront. The estuary's most serious "sag" in dissolved oxygen occurs in the Central Riverfront District. Most fish are unable to survive the very low oxygen levels which occur in the Delaware during the summer. The level of fecal coliform, a bacteria associated with human waste, far exceeds standards set by the Delaware River Basin Commission.

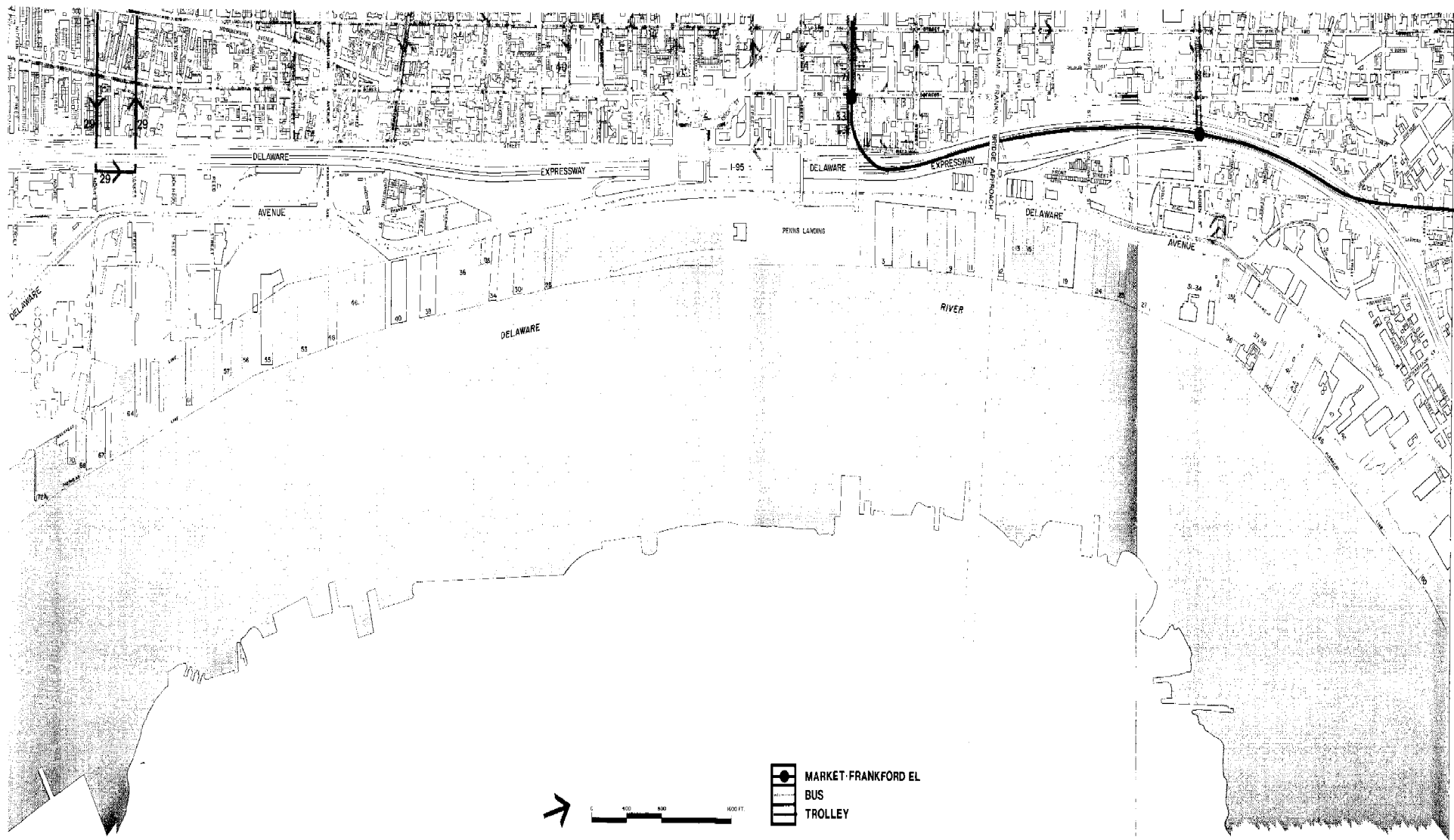
The City's \$860 million program to upgrade and expand its three sewage treatment plants will significantly improve the Delaware's water quality. When all upgraded treatment plants are in operation in 1986, dissolved oxygen levels will increase and fecal coliform concentrations will decline. Although oxygen levels in the future will not be high enough to support desirable game fish during summer, shad and herring will be better able to migrate upriver in spring than they now do.

Upgraded sewage treatment plants will chlorinate wastewater effluent, but the bacteria standard is still likely to be violated in the future.

Shallow water areas, defined as submerged lands less than 10 feet deep, are typically highly productive zones in the river's aquatic ecosystem, producing food for fish and serving as a nursery for young fish. The U.S. Corps of Engineers has mapped about 19 acres of shallows within the Central Riverfront District (See *Environmental Factors* map for the location of the shallows). Existing and projected water quality, however, is too poor in this stretch of the river to allow shallows to function effectively as areas of fish propagation and maintenance.

The U.S. Army Corps has also mapped riverfront areas prone to flooding, as part of the Federal Insurance Administration's Flood Insurance Program. During a flood event with a recurrence interval of 100 years, the elevation of the Delaware River is 10 feet above mean sea level, which corresponds to 4.3 feet City datum. At this elevation, most of the piers in the district are flooded, with the exception of Piers 38-40 and Piers 3 and 5 North. As the *Environmental Factors* map shows, the zone of flooding inland is fairly narrow in this stretch of riverfront. Because of the breadth of the river, flooding waters are not extraordinarily swift, and sufficient warning of potential flooding can be given to permit adequate emergency preparations.

Air quality is generally good in the Central Riverfront District. National Ambient Air Quality Standards are expected to be achieved in 1981 for sulfur dioxide, carbon monoxide, nitrogen oxides and total suspended particulates. Although the ozone standard was seldom violated, there



TRANSIT





were frequent violations of the standard for non-methane hydrocarbon, a precursor to ozone. Within the Central Riverfront District, the City's East Central Incinerator is the principal point source of emissions, and the Amstar Corporation is a major source at the southern boundary of the district. Both, however, are in compliance with federal standards.

There are no environmentally significant lands in the Central Waterfront District, in that there are no high quality plant communities or wildlife habitats. Vacant, undeveloped lands in this area typically support only those weed species capable of surviving harsh conditions. Aside from a

number of the common urban birds and mammals, wildlife is scarce.

There are two areas of unique landscaping in this district. Old Swedes' Church at Washington and Delaware Avenues is an attractively landscaped church yard and cemetery with an unusual assortment of shade trees. The sculpture garden and court at Penn's Landing, along with the landscaped cover over Delaware Expressway, provide scenic walkways for visitors to Society Hill and Penn's Landing.

Noise is not a major environmental nuisance in this district. The primary noise

generator is the I-95 expressway, but this has been mitigated by the construction of noise barrier walls and the depression of the expressway below Old City and Society Hill.

The City's East Central Incinerator affects the environment of the Central District in several ways. Unusual wind conditions occasionally cause a fly-ash laden exhaust plume to be carried landward, rather than over the river which is the typical direction. Odors may occasionally emanate from the storage pits and ash residue area, but only areas in close proximity to the incinerator are affected.





# Development Potential

The development potential of the Central Riverfront is a function of its location, the physical form of the land and the water's edge, and the character of existing buildings and public infrastructure. These factors will determine the general nature of new development in the area. Economic conditions are another aspect affecting the potential for new riverfront development. The ultimate development potential of the Central Riverfront will only be realized if sufficient demand is available to support this growth. Transportation and accessibility to the riverfront are also important in shaping the Central Riverfront's development potential. Extensive redevelopment of the Riverfront will require improvements to the existing transportation system. Environmental conditions may provide an opportunity for development as well as limit certain uses. In most instances, environmental goals can be achieved through sensitive design. Finally, legal issues of ownership and public regulation must be carefully considered to achieve the Central Riverfront's development potential.

At present, there is considerable public interest and enthusiasm about the City's urban waterfront. Several assumptions underlie the City's belief that current interest in the riverfront will grow and eventually sustain large scale redevelopment:

There will be continued availability of riverfront land as port activity relocates to more modern facilities elsewhere along the Delaware River.

Public concern for the environment will continue to lead to significant improvements in air and water quality thus making the riverfront a more attractive place to be.

There will be increasing public demand for recreational opportunities which are close to home and thus minimize the time and high cost of travel.

A preference for urban living will grow, based on the physical, historic, economic and cultural resources that Center City can offer.

The Delaware riverfront is a place of special amenity in the urban environment. Because of changing locational requirements of port and port-related industrial activities, some riverfront lands are now available for activities which can take full advantage of the unique attractiveness of the riverfront—living, walking and shopping.

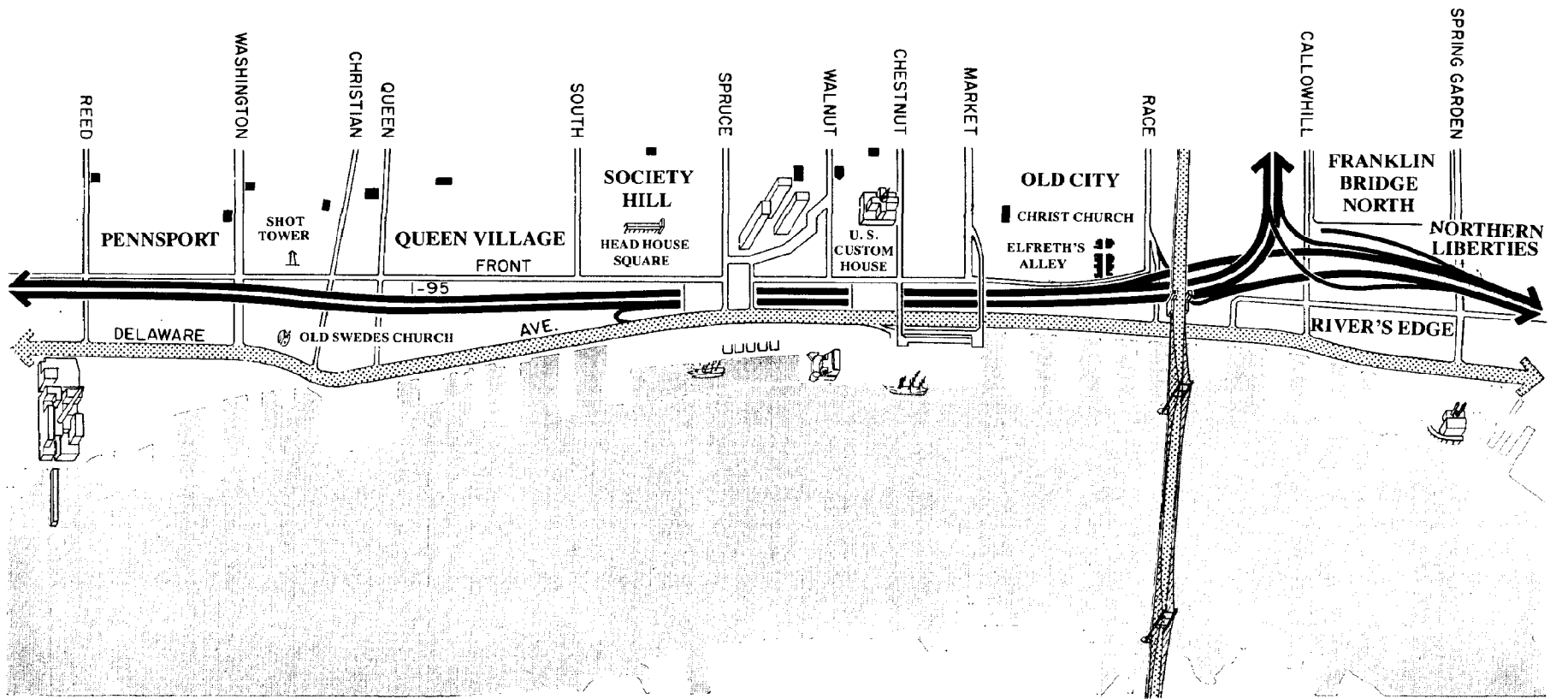
The needs of industry, the port, housing, recreation and trade for riverfront land must be examined within their riverwide context. Because the Central Riverfront District is but a two mile portion of a twenty-one mile riverfront, not all land uses need be or should be accommodated within its borders. As an example, enhancement of economic development is of highest priority throughout the riverfront. But this goal may be accomplished in different ways in the several districts. In the South Waterfront

District, land is recommended to be reserved for the port and for port-related industry. The Central Riverfront District, however, may be better suited for tourism, neighborhood shopping and recreational activities, all of which would generate new job opportunities.

Another consideration to be noted is that the long-term development potential of riverfront lands may be different from current and near term use. Several sites in the Central Riverfront, for example, will continue over the next few years to be used for port-related or industrial activity. But over the next several decades, it is probable that their use will change, reflecting the growing demand for housing or recreational opportunity within the Central Riverfront District.

In evaluating the development potential of the Central Riverfront, three factors must be considered—its setting in the urban environment, its physical characteristics and its pattern of ownership and parcel size.

## Urban Setting



- NEIGHBORHOODS
- INTERSTATE HIGHWAY (I-95)
- MAJOR ARTERIAL
- MARKET-FRANKFORD SUBWAY
- HISTORICAL SITES
- OPEN SPACE

Stretching two miles along the Delaware River and situated at the eastern edge of Center City, the Central Riverfront occupies an ideal location for residential, commercial and recreational development. (See *Urban Setting* map). In general, access to and from the site is good. Connecting the Central Riverfront to Center City are a number of major streets as well as one of the City's primary mass transit lines, the Market-Frankford Elevated. Accessibility to other areas of the City and to the region is provided by I-95 (the Delaware Expressway), Vine Street and the Benjamin Franklin Bridge.

In addition to its excellent location *vis a vis* Center City and the region, the Central Riverfront is situated directly adjacent to several of the most exciting and attractive neighborhoods of Philadelphia. The lively mixture of tourist, entertainment, residential and commercial activities in these communities have attracted a growing number of residents and visitors over the years.

Many of Philadelphia's most important historic sites are located within easy walking distance of the riverfront. Several of these sites are shown in the *Urban Setting* map. Others, found just outside the map's boundaries, include Independence Hall, the Liberty Bell Pavilion, and the Betsy Ross House. Welcome Park at 2nd and Sansom Streets, to be built for Philadelphia's 300th anniversary celebration, will add another attraction closely related to Penn's Landing both physically and historically.

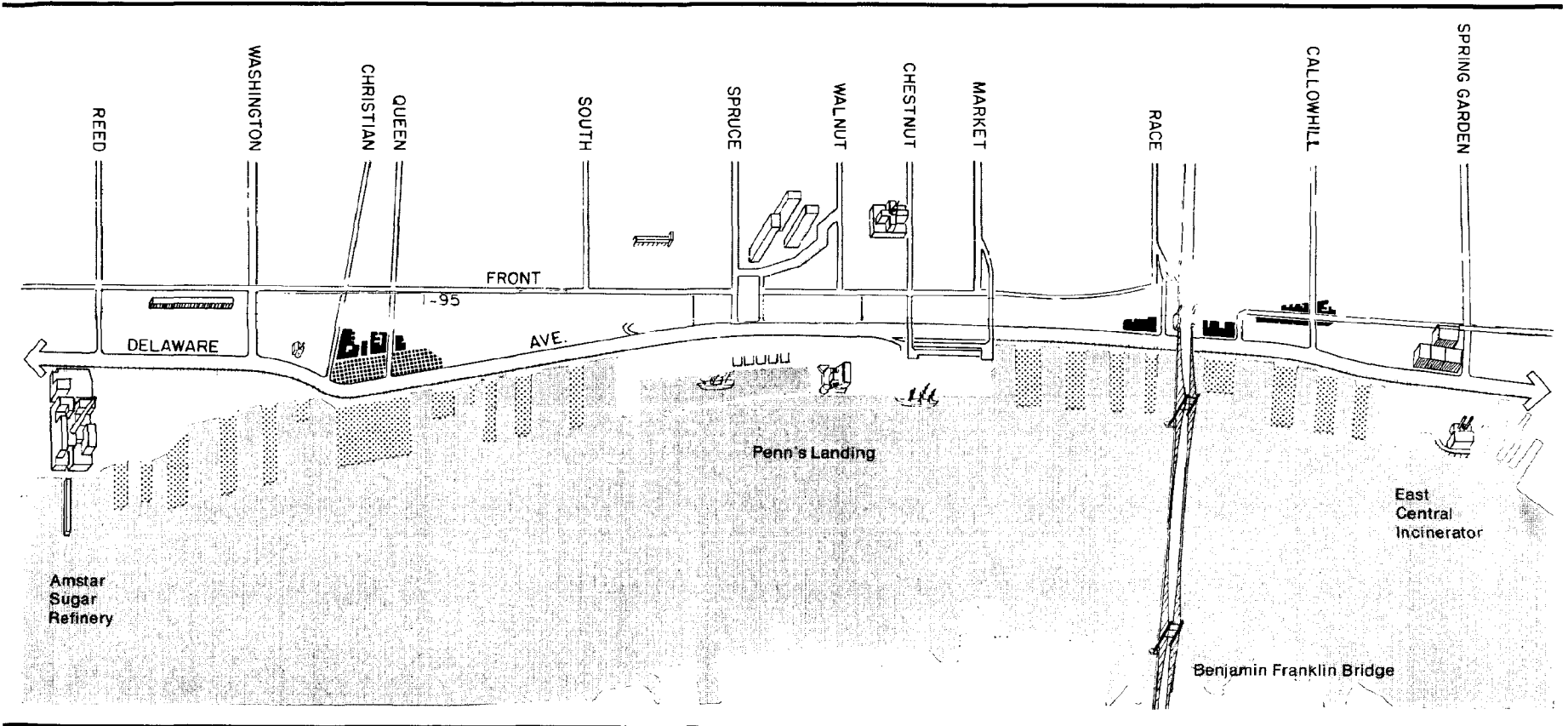
In addition to numerous historic attractions, the neighborhoods adjacent to the riverfront offer many opportunities for shopping, entertainment, and recreation. These activities, centered at Newmarket, in Old City and on South Street, have been a major factor in attracting visitors.










The mixed tourist, commercial and recreational uses near the riverfront are concentrated in the central portion of the district near Penn's Landing. This concentration could contribute to and reinforce commercial and recreational uses at Penn's Landing. To the north and to the south, however, the neighboring communities are more predominantly residential.

At either end of the Central Riverfront District, the urban setting changes from a mixed use, strongly residential character to relatively intensive industrial zones. The transition to industrial use is marked by the East Central Incinerator in the north and by the Amstar Corporation sugar refinery in the south.

## Image



- |   |                          |
|---|--------------------------|
|  | RIVER ACCESS             |
|  | HARD EDGE                |
|  | PIERS                    |
|  | LOW-RISE NON-RESIDENTIAL |
|  | LARGE WAREHOUSES         |
|  | VACANT LAND              |
|  | NEW RESIDENTIAL          |

The Central Riverfront District is a crescent of land facing east at the water's edge. The district stretches nearly 2 miles along the river while its maximum width is less than one-quarter mile. The form of the district is ideally suited for riverfront development. The area is directly oriented toward the water. The river provides a balance to the structure of the land, and the activity on the water presents the area with a dynamic panorama. The nearness of the water to all parts of the district provides an amenity which is not present in most parts of the City, and the narrowness of the land area also means that existing neighborhoods will be close to all new development.

To the east, the edge between the water and the land is broken by the penetration of Penn's Landing and the finger piers into the water. This edge contrasts with the hard edge presented by I-95 which acts as a significant visual and psychological barrier. This barrier is broken, however, at many locations. The expressway is depressed below grade and covered by parks connecting the Delaware Avenue between Chestnut and Sansom Streets and between Dock and Delancey Streets. Ramps cross the expressway at Market and Chestnut Streets. Finally, numerous streets—Spring Garden, Callowhill, Race, Queen, Christian, Washington and Reed—pass underneath the expressway to connect the district with communities west of I-95.

Delaware Avenue is the central spine of the district. At both its north and south ends, the district is defined by massive industrial structures—the East Central Incinerator and the Amstar Corporation sugar refinery.

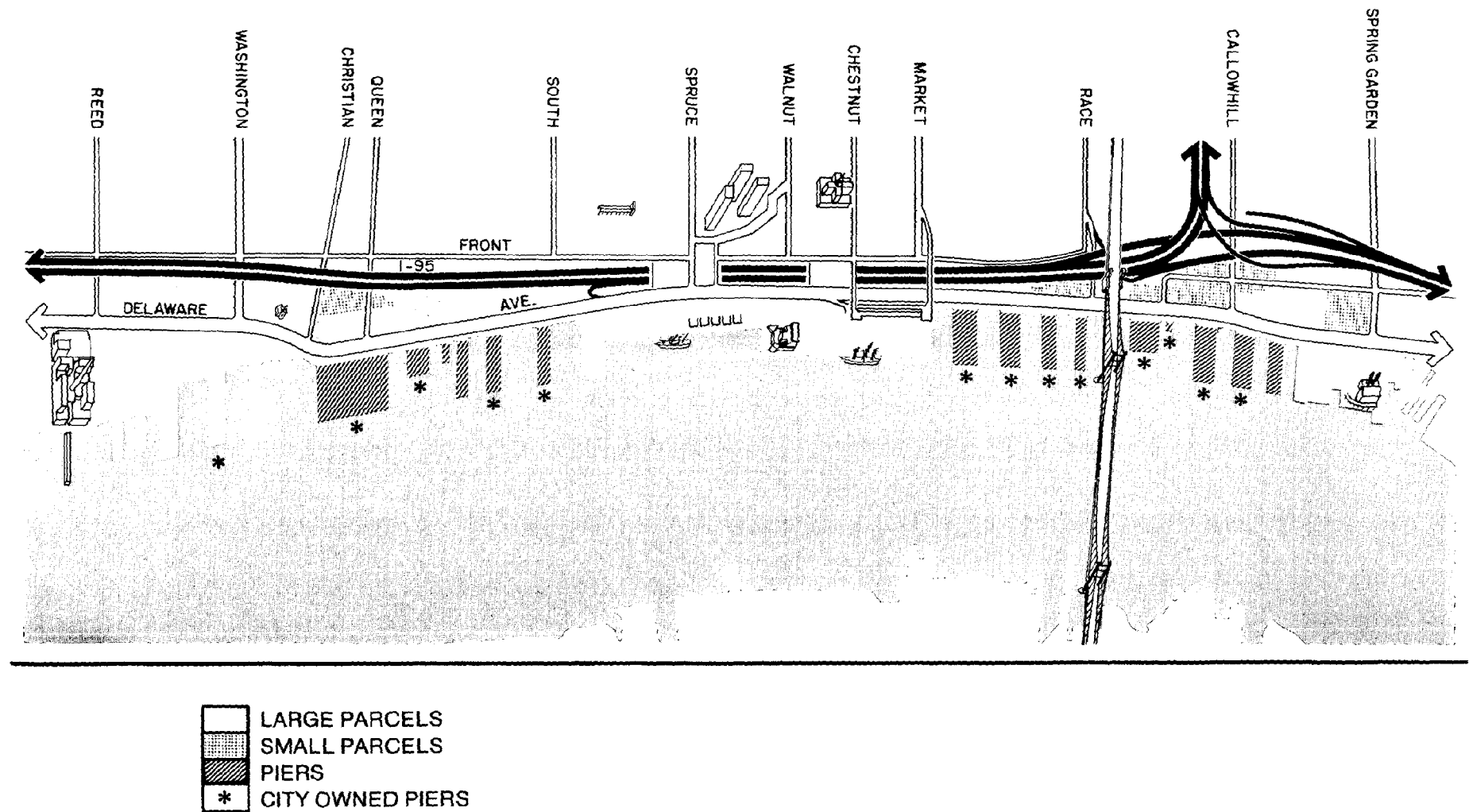
There are several important landmarks which give identity to and provide orientation within the Central Riverfront



District. The Benjamin Franklin Bridge, a massive and beautiful structure, is the dominant landmark of the district. Penn's Landing is a smaller scale and more complex landmark, highlighted by the Port of History Museum, the brilliantly colored banners and the anchored boats and ships which are open to the public. Society Hill Towers, just across I-95 from Penn's Landing, have long been a significant landmark for the eastern end of Center City. Finally, the steeple of Old Swede's Church marks the area at the foot of Washington Avenue.

The existing building stock is another determinant of the development potential of an area. Structural types in the Central Riverfront District include a number of vacant finger piers, sheds and headhouses; several large refrigerated warehouses at Spring Garden Street; a row of low-rise commercial buildings on North Front Street; and new townhouses and one-story commercial structures adjacent to Old Swedes' Church. For the most part, these structures are sound and where vacant could be rehabilitated for commercial or residential use.

## Development Patterns





The opportunities for development of the Central Riverfront District will depend to some extent on patterns of ownership and parcel size. The *Development Patterns* map identifies the pattern of parcel size and ownership and the corresponding development options for various sites in the Central Riverfront District.

The scale of development is affected by parcel size and ownership. Small scale development will typically occur on sites that are broken up into a number of parcels and are under varying ownership. This is likely to occur on individual piers and small parcels at the northern edge of the Central Riverfront. Large scale unified development can occur only at Penn's Landing and in the area at the foot of Washington Avenue where there are large parcels in single ownership.

Ownership in the Central Riverfront District is characterized by a few owners of large parcels and many owners of small properties. Of the 74 individuals or corporations with parcels in the district, 6 are major land owners, owning 4 or more acres and accounting for three-quarters of all properties and much of the land area. The City of Philadelphia is the largest land owner, controlling 69 acres and 83 percent of the 2 mile river frontage. Other major land owners include Independent Pier Company, with 10.8 acres and 1200 feet of river frontage, and the U.S. Coast Guard, with 8.9 acres and 600 feet of frontage. Large interior parcels are owned by the railroads; Conrail owns 12.9 acres, Penn Central owns 5.7 acres, and Reading Company owns 4.6 acres. The average size for the 45 parcels owned by the 6 major owners is 2.5 acres. This is considerably larger than the 0.3 acre average for the remaining 28.7 acres divided among 110 parcels.

## Development Opportunities

The entire Central Riverfront District has substantial development potential for housing, retailing and other commercial uses, and recreation. For the evaluation of development opportunities, the area can best be analyzed in terms of its three sub-districts: Penn's Landing, North Bridge, and Penn's Landing South. Each sub-district presents a somewhat different set of opportunities for development.

### Penn's Landing

Penn's Landing constitutes a major development opportunity due to its central location on the riverfront, its relation to existing neighborhoods, the size of its development parcels, its existing infrastructure and activities and the symbolism and prominence of its location at the eastern termini of Market, Chestnut, and Walnut Streets.

Penn's Landing has a crucial location because it is both adjacent to Center City and is the geographic focus of the Central Riverfront. While other major opportunities at North Bridge and Washington Avenue punctuate and define the edges of the new riverfront development area, Penn's Landing will become the center of attraction along the riverfront. The public activities on the riverfront, particularly recreation of many kinds, will be concentrated at Penn's Landing.

One of the most significant opportunities at Penn's Landing is that of truly integrating Center City with the emerging riverfront community. This linkage can be realized through a walkway system connecting the

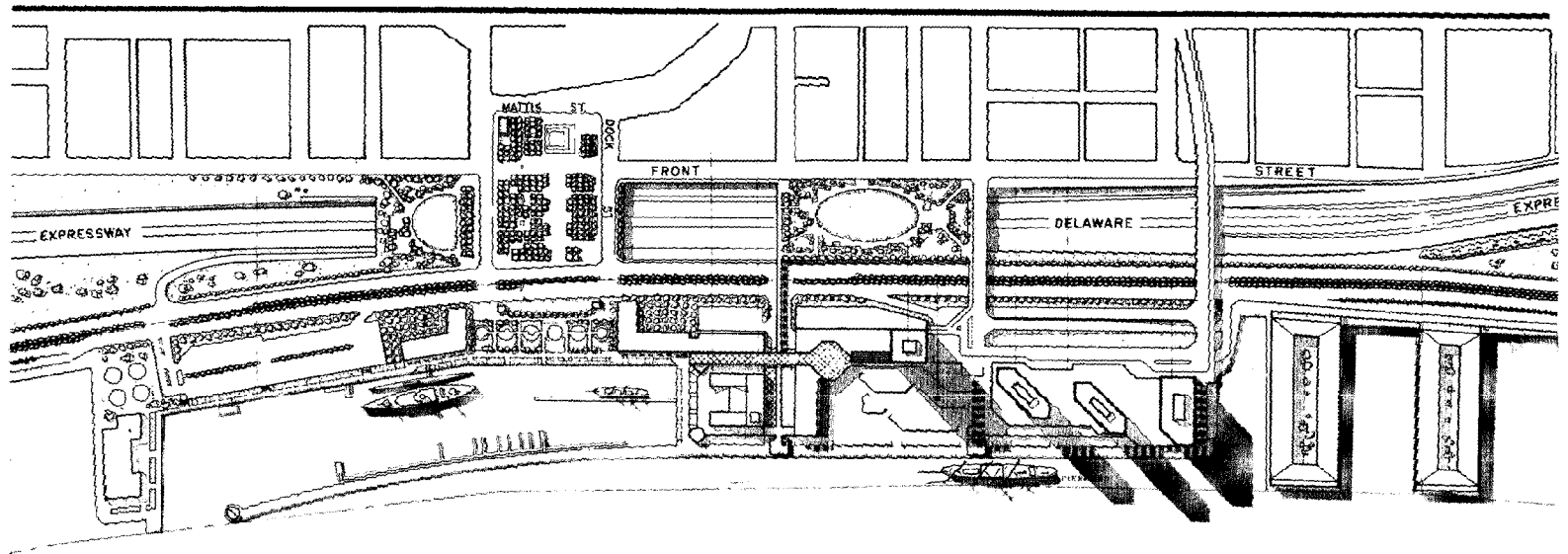
existing open spaces of Independence National Historic Park and the landscaped cover over I-95 with the public plaza at Penn's Landing. With the creation of this sequential open space network, the central business district will be effectively connected to Penn's Landing and the riverfront. This connection can be further enhanced by completing the loop road between Market Street and Chestnut Street at Penn's Landing.

The size of the development opportunity at Penn's Landing is significant. The 8 acres available for new development at the Landing constitutes one of the largest assembled development sites in Center City today.

There has been a major public investment in preparing Penn's Landing for development. The City has provided over \$37 million in public improvements resulting in development sites which are fully served with utilities and prepared for new construction. At the same time, this investment has also generated a highly successful recreational attraction. A variety of recreational facilities and events attract thousands of visitors to the Landing on summer weekends, providing clientele for seasonal commercial uses and enhancing the site's attractiveness.

While the whole of Penn's Landing is a special development opportunity, that portion of it located at the eastern terminus of Market Street is unique. It is a highly symbolic site due to its key location at the end of one of Philadelphia's two major axes. This uniqueness and symbolism makes this specific parcel the single most attractive development opportunity on the riverfront. Philadelphia has a tradition of placing grand buildings on major axes; this tradition can continue at Penn's Landing.

## Penn's Landing



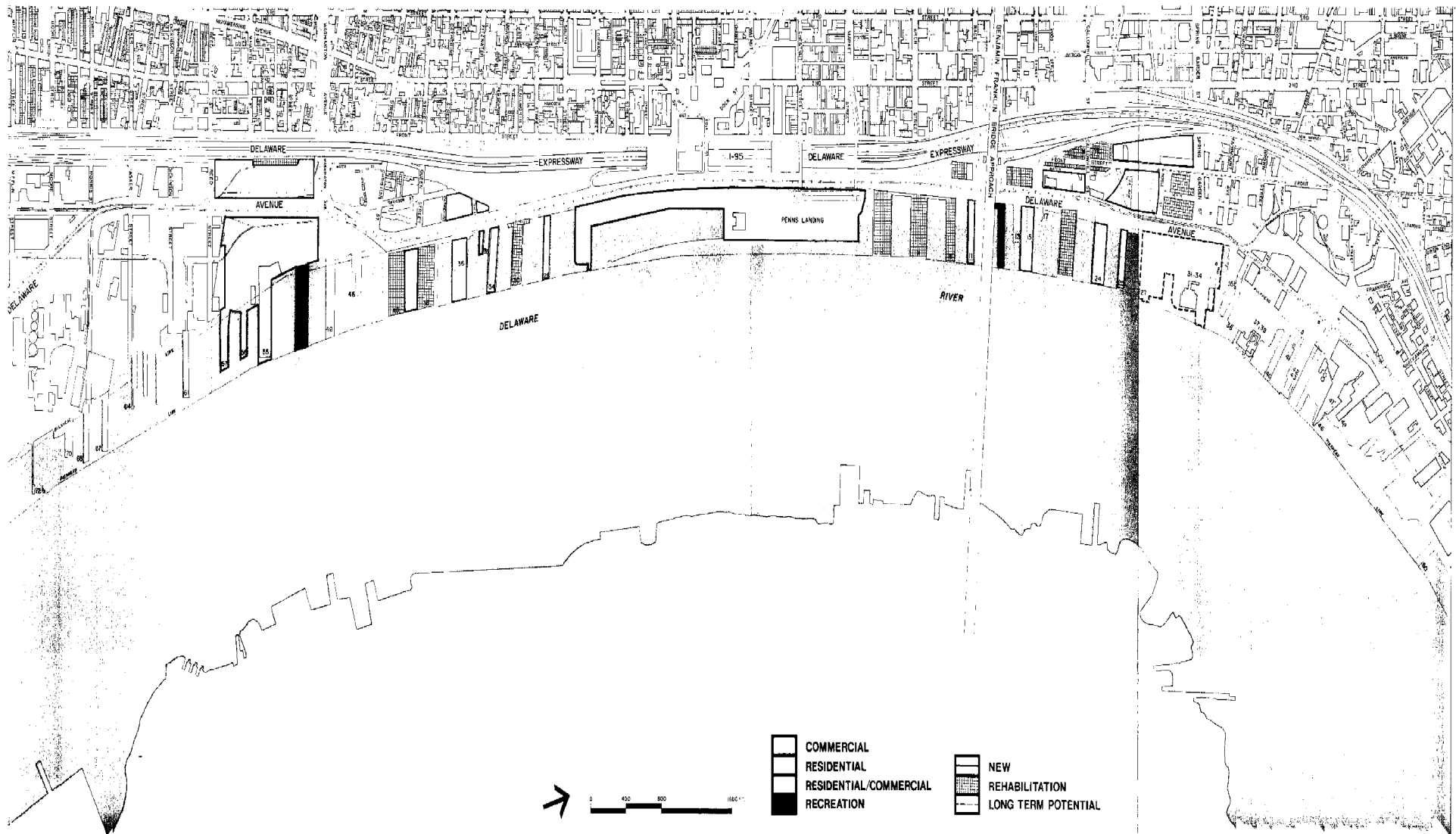
All the factors cited above point to an intensive, mixed use development at Penn's Landing. Offices and other commercial uses at Penn's Landing would reinforce the connections to Center City. A hotel would serve Center City as well as the riverfront itself and the adjacent historic districts. Similarly, recreational activities will also link Penn's Landing both to Center City and the riverfront. In addition to these activities, all of a public nature, Penn's Landing can and should become a community in its own right with residential and retail development.

### North Bridge

North Bridge shares with Penn's Landing many of the factors favoring future development. North Bridge has excellent regional and city access, provides a dramatic river location and contains many developable parcels. Proximity to Penn's Landing will be an attractive feature for new housing, but the dramatic span of the Benjamin Franklin Bridge will be a landmark and divider which should allow North Bridge to develop as an identifiable, residential neighborhood with its own local shopping and community facilities.

The greatest potential for development in this area lies in the possibility of residential reuse of existing finger piers. All but one of these piers are no longer needed for port use. The reuse of piers for housing should be guided by several design considerations.

In order to maximize views between piers and from landside areas, high-rise development should be limited to piers situated north of the point where the Delaware River bends eastward. Restricting most development to residential structures



**DEVELOPMENT OPPORTUNITY**

be in keeping with the recycling of existing piers. Retaining structurally sound headhouses and sheds is important to give identity and add interest to this area as it is redeveloped.

There are two piers where residential reuse is not appropriate, at least in the short run. Pier 12 lies in the constant shadow of the Benjamin Franklin Bridge. Recreational use, such as a small marina, would be best suited to this site. Due to its size and good condition, Pier 19 North, although presently vacant, is suitable for port and port-related use in the short-term. Over the longer term, it too can be redeveloped for residential use.

A significant issue relating to riverfront development in North Bridge concerns the 8 acre landfill site now in use as the East Central Incinerator and the Police Department's Car Impoundment Lot. Because of its size, single ownership and prime location on the Delaware River, this parcel has the potential for large-scale development. However, this potential exists only in the long-term. At present, both facilities serve vital City needs, and no plans exist for their replacement. Though study is underway to investigate alternative trash disposal opportunities, it would be unrealistic to expect that the East Central Incinerator could be easily or quickly displaced. Only after a feasible alternative to trash disposal is put into operation can the development potential of this site be exploited. This is not likely to occur for 10 to 15 years. In the interim, the Incinerator, which currently meets Federal air quality standards, will continue to function in order to help meet the overall trash disposal needs of the City.

On the land side of Delaware Avenue, North Bridge has a number of development possibilities ranging from the residential

conversion of several large warehouses to the rehabilitation for mixed residential and commercial use of small row structures along North Front Street.

In summary, North Bridge has the potential to become a unique community. Offering a variety of housing with a view of the river and provided with attractive neighborhood shopping and stimulating recreational opportunities, North Bridge can become an exciting place in which to live.

### **Penn's Landing South**

Like North Bridge, Penn's Landing South is well suited to a mixture of residential, commercial and recreational development. The major difference is that Penn's Landing South has fewer buildings suitable for rehabilitation, thus most development will be new, and the scale of development will be less constrained by existing structures.

The area at the foot of Washington Avenue differs from other potential development sites in the Central Riverfront District. At present, this area can be considered a transition zone, situated between active port and industrial use to the south and recently constructed housing to the north. Here, the only existing use of the land is by Conrail which provides rail service to the Amstar Corporation from the Reed Street Rail Yard. However, it is possible that Amstar could be served either from rail lines on Vandalia Street to the south or from a smaller redesigned Reed Street Yard. In either case, substantial land could be freed for other purposes. If consolidated with its adjacent parcels including the City of Philadelphia's demolished Pier 53S, Independent Pier Company's vacant Piers 55-57S and the former Federal Street Rail Yard owned by the Penn Central estate, the resulting 33 acre cleared site would

represent a major redevelopment asset (see *Development Opportunity* map). Properly designed with a buffer between existing industry and homes, this site could provide attractive residential and recreation opportunities. The 7 finger piers which are located directly north of Washington Avenue also offer strong residential redevelopment potential. Most of the piers are no longer needed for port use. Pier 28 South, in fact, exists only as timber piles. Piers 38-40 South, joined by landfill, could be reactivated for port use in the short-term, and can only be considered for residential conversion when their further use for port activity proves infeasible. However, the 6 acre site at Piers 38-40 has the potential to accommodate major redevelopment including the residential rehabilitation of its sheds, commercial development on the landfill area between piers and an extension of the Riverwalk to the end of the pier.

## Circulation Opportunities and Constraints

Existing access and circulation problems, unless corrected, may act as constraints on development of the Central Riverfront. Fortunately, plans to solve many of these problems are already under consideration. Below is a summary of circulation problems affecting riverfront development, an overview of plans and studies offering opportunities for solution of these problems, and an analysis of the traffic impacts of future development in the district.

Access to the Central Riverfront District during peak hours is difficult. This problem is most severe along Race and Vine Streets. Race Street would be the most convenient access point to the district for many people but, during the afternoon peak hour, it is so crowded with cars headed for I-95 north that most drivers choose another route, even if it requires a considerable detour through local streets. Access to the district from I-95 north is a lesser problem, nevertheless serious congestion exists at the 2nd and Callowhill exit during the morning peak hours.

Leaving the Central Riverfront is more difficult than getting there. There is no westbound street connecting Delaware Avenue with Center City between Spring Garden and Market Streets. Access to Vine Street westbound, an important route, is particularly circuitous. Getting onto I-95 southbound requires a 2½ mile drive before entering the Expressway. The Lombard Street northbound ramp is the only I-95 entry ramp directly accessible from the Central Riverfront.

A third issue related to Central Riverfront circulation is traffic congestion in the adjacent neighborhoods west of I-95, particularly in Society Hill around Front, 2nd, Spruce and Lombard Streets. This traffic congestion can hamper access to the district, and in turn, traffic generated by development in the district has the potential to make the existing congestion problems worse.

Transit service in the Central Riverfront District is inadequate to serve residential development as envisioned. Special transit service is also needed during special events at Penn's Landing to relieve overcrowded parking and access routes.

Portions of Delaware Avenue require improvements in order to handle the traffic flow which will be generated by future development. North of Vine Street and south of Catharine Street, increased traffic control and physical improvements to the roadway are needed. Median cuts will be needed at various locations on Delaware Avenue to permit access to development sites.

### Current Plans and Studies

Several plans and studies underway offer the potential to greatly enhance the accessibility of the Central Riverfront. In 1980, a joint City-State Task Force studied the design for the Vine Street Expressway and recommended a scaled-down design which would connect Vine Street to I-95 and the Benjamin Franklin Bridge. By providing a direct connection from Vine Street to I-95 and reducing the traffic on Race Street headed to the northbound I-95 on-ramp, the Vine Street Expressway would make the Race Street to Delaware Avenue connection a much easier path to the district than it presently is during peak hours. In addition, by relieving the 2nd and

Callowhill intersection, the connections may permit Callowhill Street to become two-way between 2nd Street and Delaware Avenue, thus providing a much-needed westbound access route between Spring Garden and Market Streets.

Another important planning effort is the I-95 Ramp Study. This study will consider the opening of the southbound entry ramp at Morris Street, the northbound exit ramp near Bainbridge Street south of Penn's Landing, and a flyover ramp to provide direct access from southbound I-95 to Penn's Landing.

Finally, a Transportation Systems Management Study for Society Hill and Queen Village is currently underway. This study will look at transit, parking and auto restriction measures to reduce the congestion problems in these neighborhoods. A Residential Permit Parking Program has been implemented in Society Hill, along with other areas of Center City. Although it is too early to evaluate the success of this program, Society Hill and Queen Village are anxious to investigate other actions which may help solve their existing parking and traffic problems.

### Traffic Impact Analysis of Riverfront Development

Development of the Central Riverfront District would increase traffic volumes on Delaware Avenue and would also add to traffic levels on streets connecting to Delaware Avenue.

The traffic analysis examined two different scenarios of riverfront development. The first scenario is a condition in which considerable development has taken place, but the Vine Street Expressway connection to I-95 is not yet complete. The second



scenario assumes full development of the riverfront and completion of the Vine Street connections to I-95 and other circulation improvements recommended by the plan. The two scenarios are referred to as Phase II and Phase III because they correspond to the phases as described later in the *Central Riverfront District Plan* chapter. In each case, the analysis assumed the higher density development alternative. For lower density alternatives, the traffic impact would be less.

For the Phase II analysis, the major question is the potential traffic impact on Spring Garden, Chestnut and Spruce Streets resulting from riverfront traffic diverted from Race Street due to its heavy congestion with I-95-bound traffic. The Phase III riverfront-related traffic for these approaches during afternoon peak periods was estimated to be:

Spring Garden—400 vehicles  
Chestnut—465 vehicles  
Spruce—155 vehicles

Spring Garden Street and Chestnut Street could readily handle the added traffic. Some minor traffic engineering improvements would be needed on Spruce Street and Front Street south of Spruce, however, in order to reduce existing backups and accommodate additional vehicles headed for the riverfront.

For most of the street network, the greatest traffic impacts from riverfront development would occur during Phase III, at full development. The *Traffic Volume* map shows the estimated traffic volumes generated by full development in the Central Riverfront District during weekday afternoon peak hours. The *Traffic Volume* map also shows existing volume, where available, for comparison.

The increase in traffic volume on Delaware Avenue resulting from development of the Central Riverfront would range from 10 percent to 60 percent in different sections, averaging approximately 30 percent within the district. Since Delaware Avenue is three lanes wide in each direction, with additional turning lanes at many intersections, the additional traffic could easily be accommodated at acceptable levels of service.

Development-generated volumes on most of the access roads connecting to Delaware Avenue would be relatively low and would not significantly affect levels of service. Although Race Street would attract a large proportion of riverfront-destined traffic during Phase III, the completion of the Vine Street connections will considerably relieve Race Street congestion, allowing it to accommodate the additional riverfront traffic. The conclusion of the traffic impact analysis for residential, office, retail and hotel development is that even intensive development of the Central Riverfront District will not have significant adverse impacts on traffic flow in the area.

The impacts of other activities, such as entertainment, festivals and special events, are more difficult to evaluate. These events will vary in timing, duration and levels of associated traffic. The greatest potential for traffic impacts would result from:

- events coinciding with computer peak periods
- events with concentrated start and end times, for example, concerts
- very large special events, such as ethnic festivals.

Even if these events do not attract large numbers of vehicles in a short period of time, traffic congestion may result from many vehicles searching for parking spaces, a situation similar to that which now exists in Society Hill and parts of Queen Village. The best solution to the potential traffic problems of special events apparently lies in careful planning of the events, using improved signage and other means to direct vehicles to available parking, and providing supplementary transit service, such as shuttle bus service to remote parking.



## Environmental Constraints

The most significant environmental concern in the Central Riverfront District is the potential flooding of the Delaware River. About 100 acres of riverfront lands are within the floodplain of a flood event with a 100 year recurrence interval and are subject to special development controls.

In June 1979, the Philadelphia Code was amended to bring the City into conformance with federal floodplain management guidelines. The amended code requires that non-residential structures within the 100 year floodplain be floodproofed up to a level which is one foot higher than the elevation of the 100 year flood. The regulatory flood elevation is 11 feet above mean sea level, or 5.3 feet based on City datum. The code also requires that ducts, pipes, and tanks below the regulatory flood elevation be anchored and that bouyant, flammable or explosive materials not be stored below that elevation. The City's Department of Licenses and Inspection reviews the details of all plans for structures in floodplains against national construction standards.

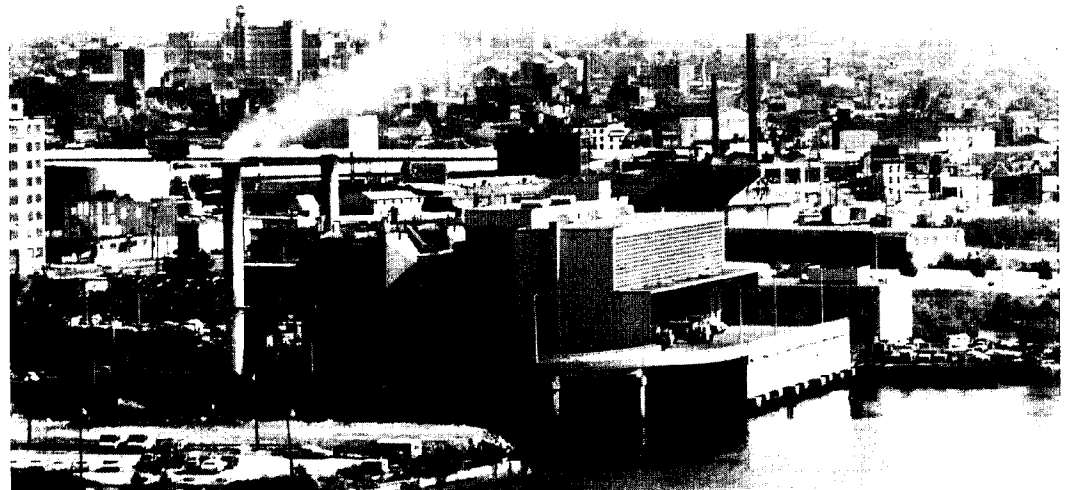
In addition to meeting the code, properties within the floodplain of a 100 year flood generally must obtain flood insurance. Any development project requiring federal assistance is required by federal law to obtain flood insurance, and mortgage insurance companies also require purchase of flood insurance. The City's adoption of flood plain regulations has assured the availability of flood insurance for Philadelphia properties.

Pennsylvania also reviews riverfront development proposals for their impact on flooding. State law has established a procedure for issuance of Water Obstructions Permits to persons with structures in or near rivers. Administered by the Department of Environmental Resources, the objective of this permit process is to ensure that riverfront structures allow the safe passage of floodwaters and ice. Impacts on the natural environment and the safety of the facility are also evaluated by the State.

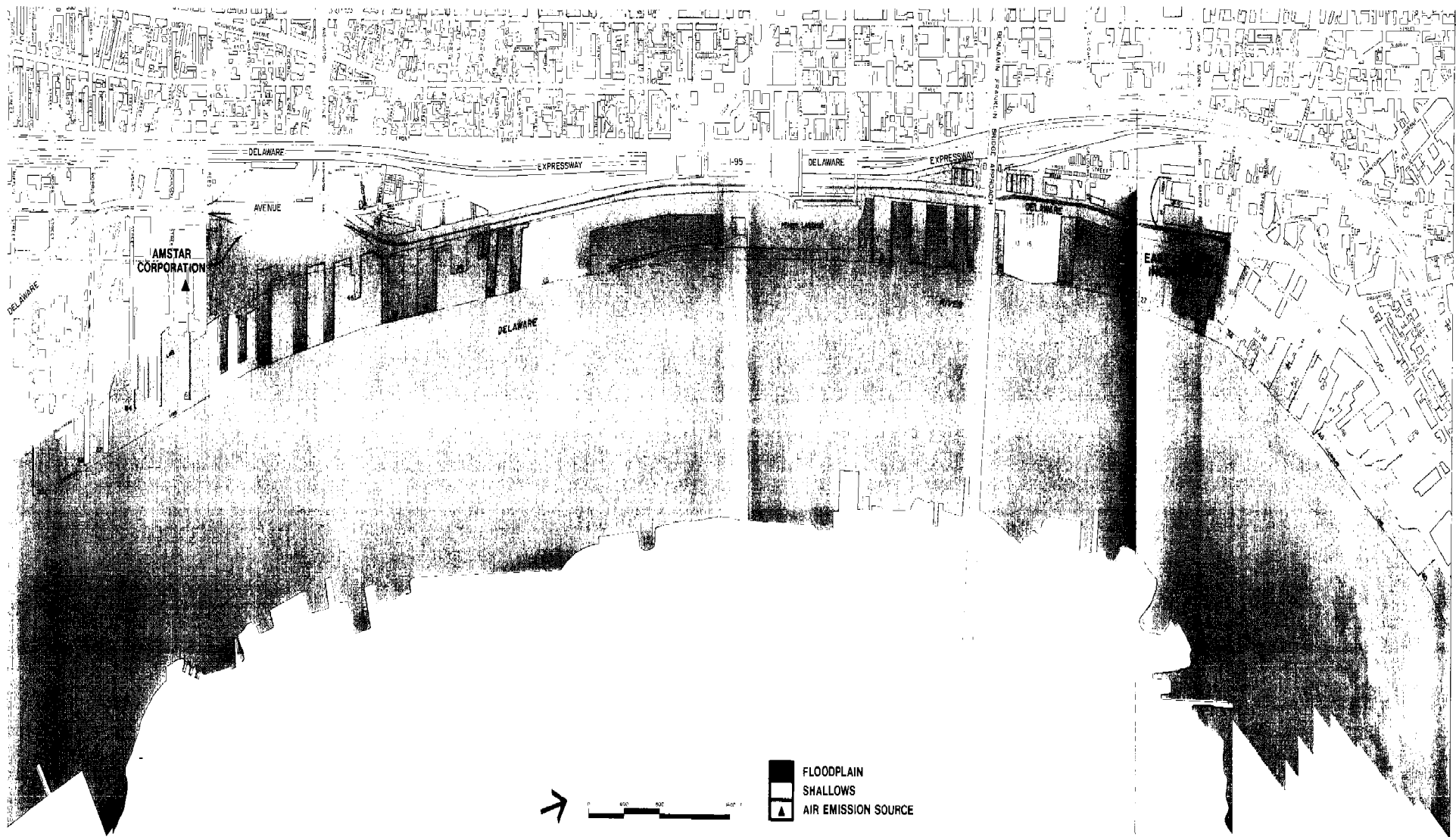
Another significant environmental control is the protection of shallow water habitat areas. The 19 acres of submerged lands shallower than 10 feet in this district are protected by federal environmental laws and regulations. The U.S. Army Corps of Engineers administers a permit program which allows disturbance of shallow water habitats only by applicants who are proposing a water dependent use of wide public benefit. Residential development, for example, generally will not be issued permits if it were to require new fill in shallow water areas. Reuse or

reconstruction of piers, as long as a substantial modification of the river bottom is not proposed, should generally receive Corps of Engineer permit approval.

Should future development activity require the filling of shallow water areas, applicants for Corps of Engineers permits should offer two items in support of the filling. First, because current and future water quality is projected to be poor in this area, the shallows do not function as critical aquatic habitat areas. Their disturbance, therefore, might not be regarded as a serious environmental impact. Second, applicants should consider the creation of artificial shallow areas at an upstream location to compensate for the downstream loss. The upstream area should be north of the Tacony-Palmyra Bridge where water is of sufficiently high quality to support fish life. Shallows restoration is feasible from both an engineering and cost perspective. Technical assistance is available from the Philadelphia District of the U.S. Army Corps of Engineers.







# ENVIRONMENTAL FACTORS

Water quality is poor in this stretch of the Delaware. Because it is too poor to support fish life in summer, recreational fishing is not a significant recreation activity in this area. While river quality is suitable for pleasure boating, body contact may be harmful due to high bacteria levels. Even after the pollution abatement program is complete, water quality will be too poor to sustain either significant recreational fishing or body contact sports during the summer. Future water quality will be sufficient, however, to permit passage of migratory fish in large enough numbers to support small-scale commercial fisheries for shad and herring upriver and for some recreational fishing within the district during migration.

The East Central Incinerator is the principal point source of air pollution. The two electrostatic precipitators with which this incinerator are outfitted have deteriorated, but they will be replaced by the City at a cost of about \$1.3 million. Even with this improvement, the incinerator will discharge about one-half ton of pollutants daily which is consistent with emission standards. The incinerator will also periodically emit fly ash, which during unfavorable winds may be blown inland rather than over the water.

Noises and odors, for the most part, are only minor environmental problems in the Central Riverfront District. The kind of mixed land use planned for the district may create a higher noise level than exists today, but construction methods likely to be employed in new riverfront housing should provide adequate soundproofing. The district does not contain activities prone to serious odor generation. The East Central Incinerator is the only facility which may occasionally be an odor nuisance, particularly if homes are built in close proximity to it.

## Legal Constraints

Legal factors may constrain development of the Central Riverfront District. Legal constraints were created in the past to protect the public interest in the nation's navigable waters. But as public priorities for water use have changed over time, some of these regulations have become obsolete. Such laws can and should be revamped in order to achieve future riverfront development objectives.

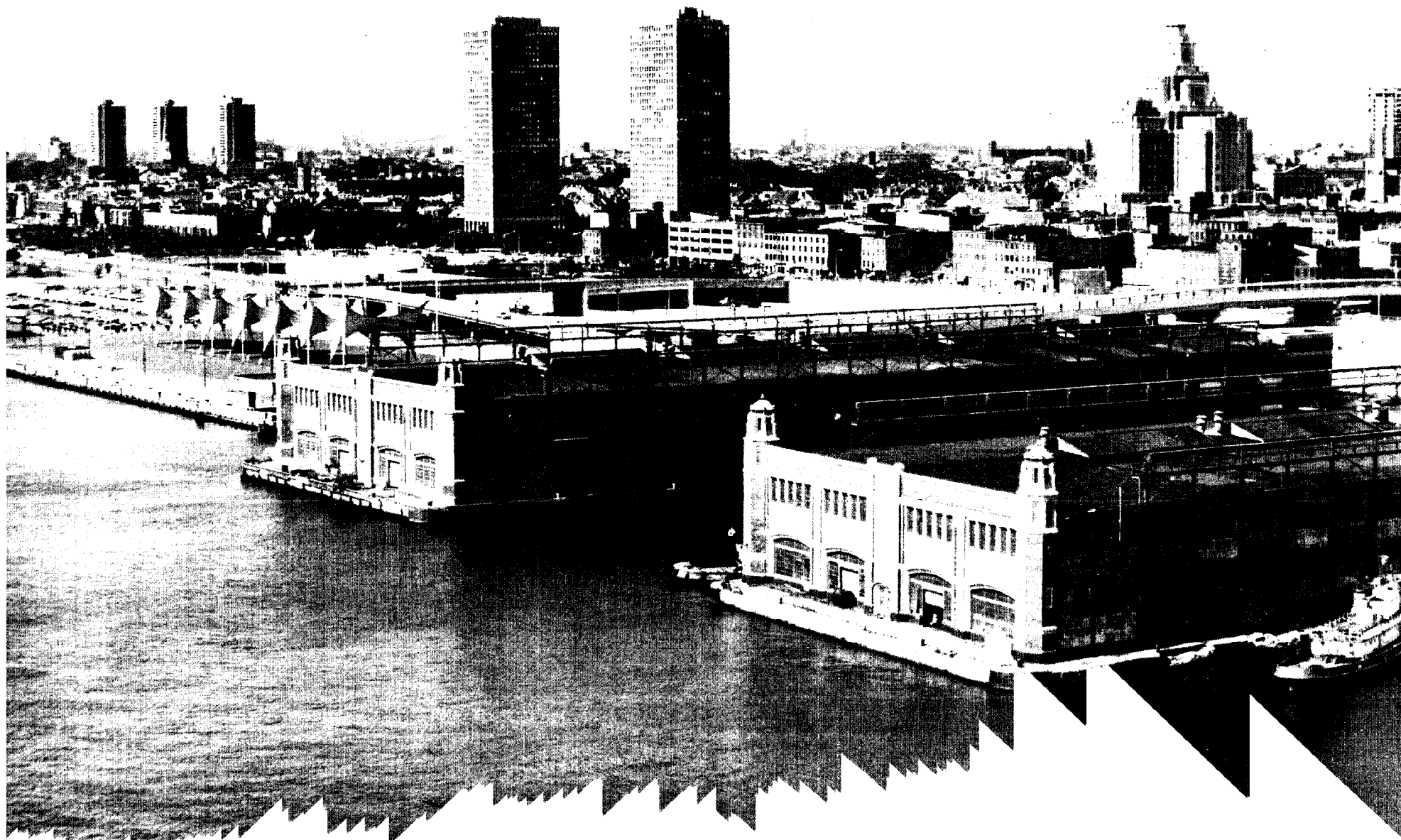
Two legal considerations are involved here. First, all private lands along the riverfront are subject to federal *servitude*, meaning the federal government has the constitutional right to influence land use decisions which might affect navigation. Second, the Commonwealth of Pennsylvania owns the waters and underlying lands along the riverfront and generally will only lease them to landowners wishing to build piers or other riverfront structures. These two factors affect the extent to which property rights can be conveyed to private interests and may influence the kind of development which can occur along the riverfront.

Under the commerce clause of the U.S. Constitution, the Federal government was given absolute powers to regulate development within navigable waterways. These powers could be used to prevent private or public development which interfered with or at some time could interfere with the public interest in maintaining navigation for the promotion of interstate and foreign commerce. Development projects which conflict with navigational interests are not permitted by law and, consequently, not given any rights as private property. This effectively precludes any conveyance of property rights in navigable waters to private interests. Consequently, it could inhibit

private developments which are not explicitly related to navigational interests within the Central Riverfront. However the exercise of the Federal powers is subject to judicial interpretation as well as legislative definition. Therefore any potential impact on proposed residential development is not certain.

During the formation of the United States, states were granted ownership of waters within their boundaries and the underlying lands. Title to the Delaware River's bed remains, for the most part, with the State. With the exception of Penn's Landing, the State owns all land below the low water mark, i.e. the bulkhead line, in the Central Riverfront. City and private development within that area must be licensed by the State. In general, riparian land owners are granted easements by the State to wharf out to the pierhead line and can convey title to such easements. However, unless explicitly conveyed by the State, the exercise of an easement does not imply any rights of private property. Unless title is conveyed by the State Legislature, development on piers can be considered no more than a leasehold improvement.

Either of these two factors could prevent development of the riverfront from following traditional patterns. If the federal servitude and State ownership issues cannot be resolved directly, then the riverfront development will be contingent on unusual legal arrangements for the transfer and control of property. Such arrangements would, no doubt, require a greater marketing effort and would result in slower and, perhaps, less intensive development of the riverfront.





# The Central Riverfront Plan

The plan for the Central Riverfront District is intended to serve two purposes. First, it is to convey to the citizens of Philadelphia a vision of what the future of the Central Riverfront should be, and, second, to outline how this vision can be achieved.

When adopted by the City Planning Commission, this plan will become a guide for regulation of private development. The plan will also offer guidance to other public agencies involved in making decisions relating to riverfront development.

The plan has both physical and strategic components. Physically, the plan makes specific land use and urban design recommendations. Strategically, the plan provides a set of policies to guide future development in a manner that is consistent with overall City goals and objectives. The precise design and timing of actual projects however are left to the marketplace. At such time when the need arises and funds become available, implementation will occur. The plan's directives include activities proposed for the Central Riverfront and the physical forms they will take, as well as the process by which these recommendations may be implemented.

## Opportunities

The Central Riverfront Plan offers Philadelphia the rebirth of the Delaware Riverfront as a place to live and work, to shop and dine, to be entertained and to have fun.

William Penn, in planning Philadelphia three hundred years ago, viewed the Central Riverfront as the initial edge of the new city. It was on the riverfront and nearby areas that the City's first commercial, residential and administrative centers were developed. In the last century, the Central Riverfront has served Philadelphia as a center for port activity and industry. With changes in shipping and commerce, the Central Riverfront today is no longer necessary to the City's port or to the region's industry.

The City has developed modern port facilities both in the North and South Waterfronts to meet the needs of today's industry. Changes in shipping and cargo handling technology have made the existing finger piers of the Central Riverfront obsolete. Further, the construction of I-95 and the development of Penn's Landing has resulted in a section of riverfront from Spring Garden to Reed Street which is poorly suited for industrial development or for the construction of modern port facilities. As a result, the City has encouraged industrial and port development in areas both north and south of the Central Riverfront where sufficient land for these purposes exists and which are much more suitable for these uses.

The opportunity now exists to rebuild this

two mile length of historic riverfront, and the magnitude of this development opportunity cannot be overstated. In the Central Riverfront Plan, the City is provided with an opportunity to dramatically change the form of Center City Philadelphia. The nature of this change is both substantial and far reaching. Not since the creation of the Benjamin Franklin Parkway or the development of Penn Center has the City had the opportunity to radically reshape the form of Philadelphia. The successful development of the Central Riverfront as envisioned by this plan will influence the development pattern of Center City for the next century. The reasons for this are clear.

Philadelphia has one of the strongest and most dynamic commercial core districts in the country. In the past 30 years the City has seen major new commercial development beginning with Penn Center. Over the years, many new office buildings have been constructed in Penn Center and to the west of City Hall along Market Street. Independence Mall has transformed the historic area north of Independence Hall into a major node of commercial and governmental activity.

The City is pursuing development of Market Street East as a retail and office center in conjunction with the Commuter Connection. The City is currently experiencing a boom in hotel construction. Center City has always been the retailing hub of the region. This activity is still very strong and in recent years has been buttressed by the completion of the Gallery, New Market and the Bourse. This commercial development will continue.

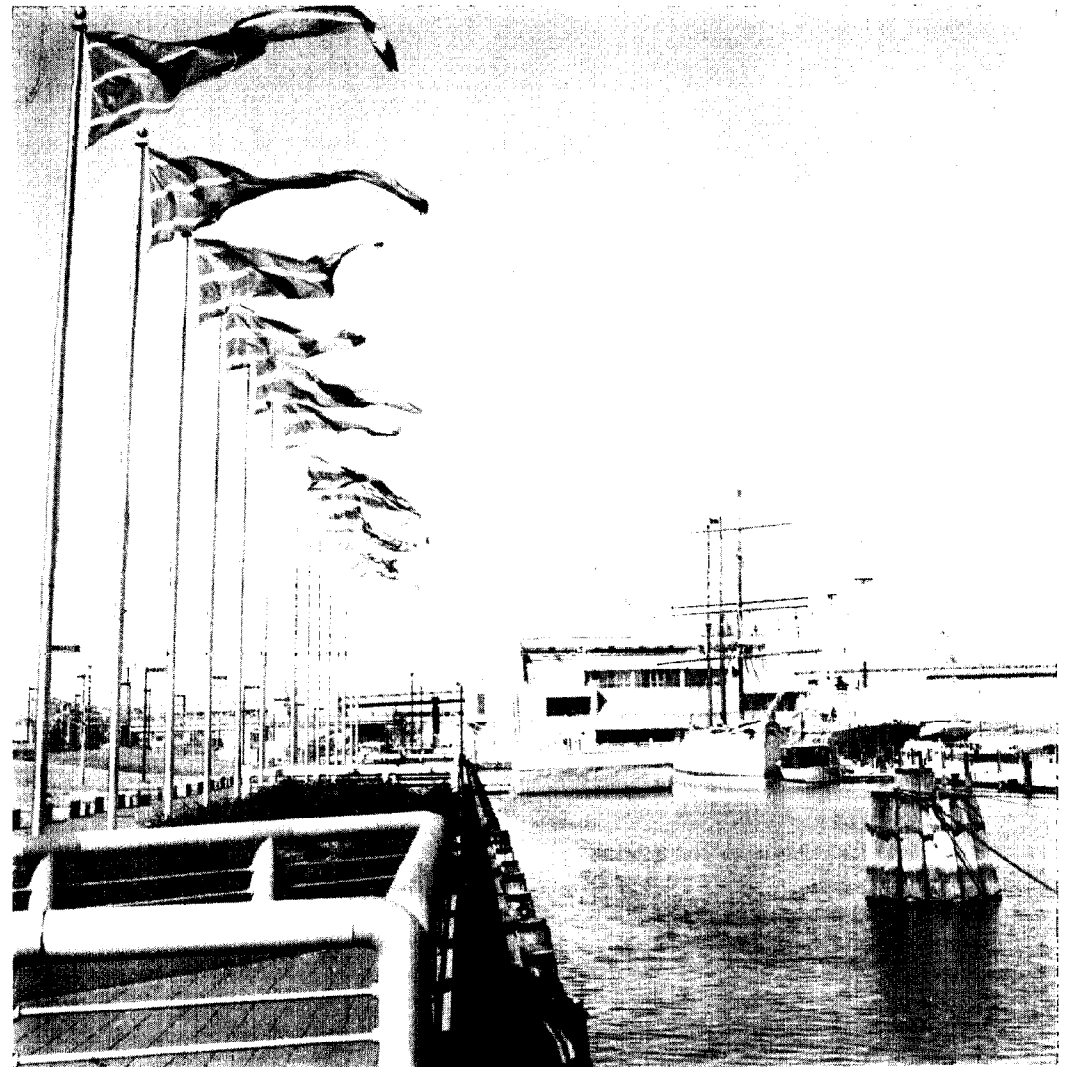
Major improvements to the region's commuter rail system, the subway system and to the highways serving Center City are underway and will increase the commercial development potential of Center City.

Philadelphia also has one of the country's truly livable downtowns. Over 60,000 people live in Center City or in the immediately adjoining areas. The residential communities in this area include Rittenhouse Square, Southwest Center City, Fairmount, Chinatown, Washington Square, Society Hill, Old City and Queen Village. These communities provide various housing types and living styles. The residents of these communities are attracted to Center City because of the nearness to places of work and the amenities of Center City, including shopping, restaurants, theaters, museums, parks and fountains. These residential communities have given Center City a remarkable environment. The quiet tree-lined streets, the magnificently restored historic homes, the exciting commercial office core, lively restaurants and theaters and dramatic architecture combine to give Center City a special quality as a place to work, to live or to visit.

Philadelphia now has the opportunity to build upon the success of Center City and add a bold new dimension through the rebirth of the Delaware Riverfront. The riverfront development proposed in this plan will extend Center City to the Delaware River. The Central Riverfront will again, as it was in William Penn's days, become a part of the commercial, residential and administrative core of Philadelphia. Development of this area will provide new housing opportunities on the scale of Society Hill and Washington Square. The Central Riverfront will provide dramatic new sites for commercial

development in Penn's Landing. Retail stores to serve the new residents and those visiting the river will follow. And finally, the Delaware River, the reason for the location of Philadelphia itself, will be made once again an integral part of the City. The Central Riverfront will provide a new focus

for the growth of Philadelphia for generations to come. As Philadelphia celebrates the three hundredth anniversary of its founding, it is fitting that new growth be again focused on the Central Riverfront where the City was first settled.



## Planning Concept

The planning concept for the Central Riverfront District is composed of several basic elements. The first of these is to focus Central Riverfront District development on the river. New housing and commercial buildings will be designed to take advantage of river views. Those buildings with less than four floors will have views oriented to the water's edge or to other centers of activity. Residential towers and high-rise commercial buildings will be able to take advantage of the dramatic river and City views afforded by a higher elevation. Throughout the Central Riverfront District, the new housing and other uses will have direct access to the river, and the overall design will be sensitive to the water's edge. Although the Plan proposes construction of several residential and commercial towers and a substantial number of lower scale buildings, the views of the river from Center City will be preserved and enhanced to the greatest degree possible.

In keeping with the river focus, the existing finger piers, which formerly supported port activities, will be used to develop new housing. At both the southern and northern edges of the district, residential towers will be built on finger piers. The towers will serve to define the limits of the Central Riverfront District, and the scale of these structures will be consistent with that of the existing massive structures to the north and south. Elsewhere in the district, the existing sheds of some finger piers will be converted to housing units. Where sheds are non-existent or unsuited for residential conversion, new development will consist of a mixture of condominium townhouses, retail uses, open space and parking.

One of the principal attractions of housing on the piers will be the magnificent views

offered by a riverfront location and the use of the river for recreation. In the area north of Penn's Landing, several large industrial and commercial buildings can be converted to residential use. In addition, in this area numerous smaller commercial buildings remain which can be restored for retail use on the ground floor and for residential use of the upper floors. Reuse of these buildings will provide a small retail and commercial center for this area. Their restoration, along with preservation of headhouses on the piers, pier sheds and nautical details, will provide a historical sense to the new development.

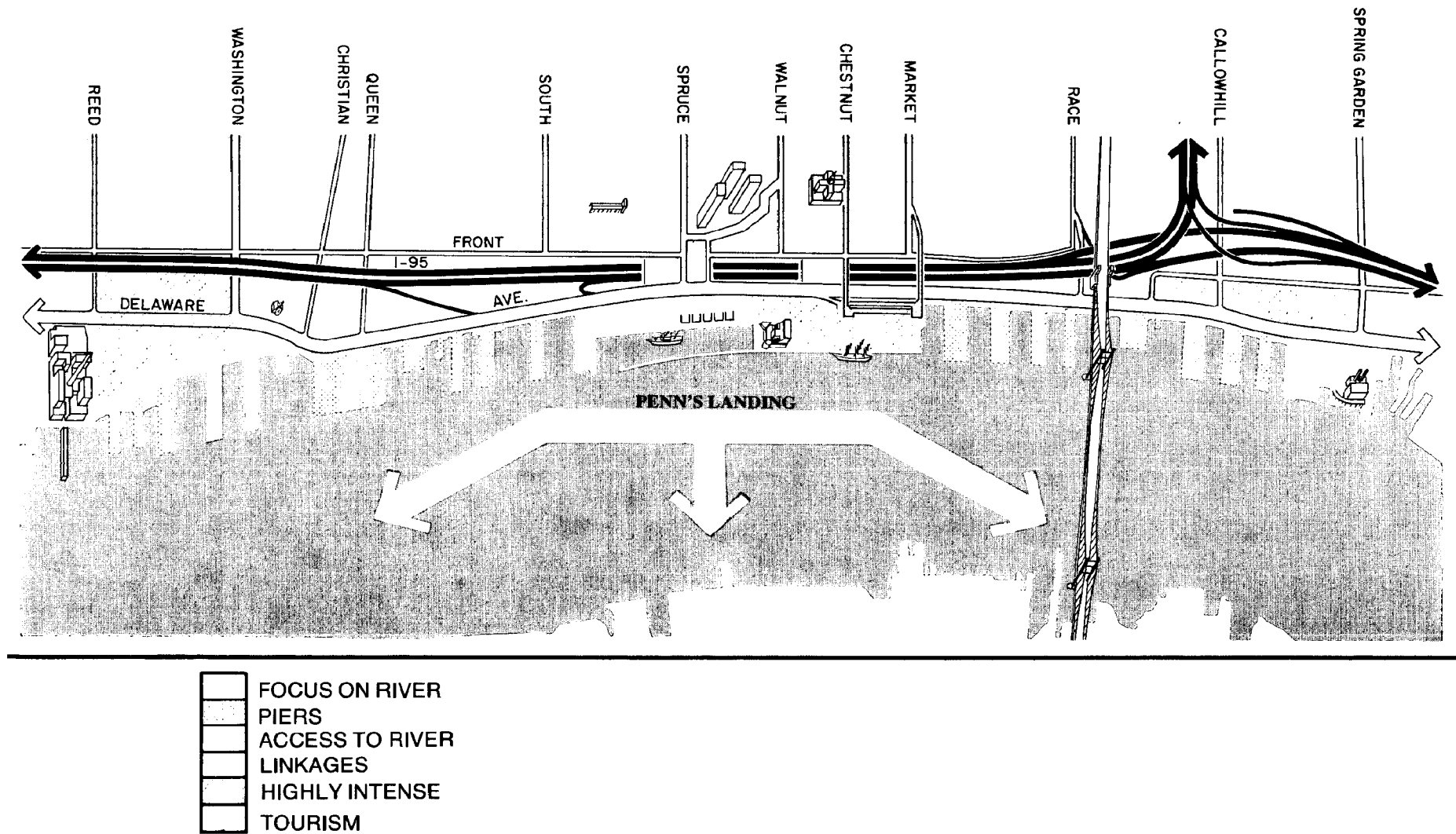
Although the Central Riverfront will be developed throughout at a high level of intensity, the scale of development will be one of contrasts. Development will range from single family townhouses to residential and commercial towers. Penn's Landing is envisioned as a major public and private space with several residential and commercial towers interwoven with public areas and attractions. Penn's Landing will be the centerpiece of riverfront development in Philadelphia. A major formal plaza opening onto the water will be part of the new development of Penn's Landing. The riverfront plaza will be the focus of new development and will serve as a place for special events. Surrounding the public plaza will be developed a mixture of offices, retail shops, condominium housing and a hotel. Penn's Landing will also be a place for public activity. In addition to the existing public uses on Penn's Landing, which include the boat basin, embarcadero, sculpture garden and State Museum, other public attractions will be created including an entertainment center, gardens, fountains and exhibition space.

North Bridge and Penn's Landing South will both be developed with a mixture of

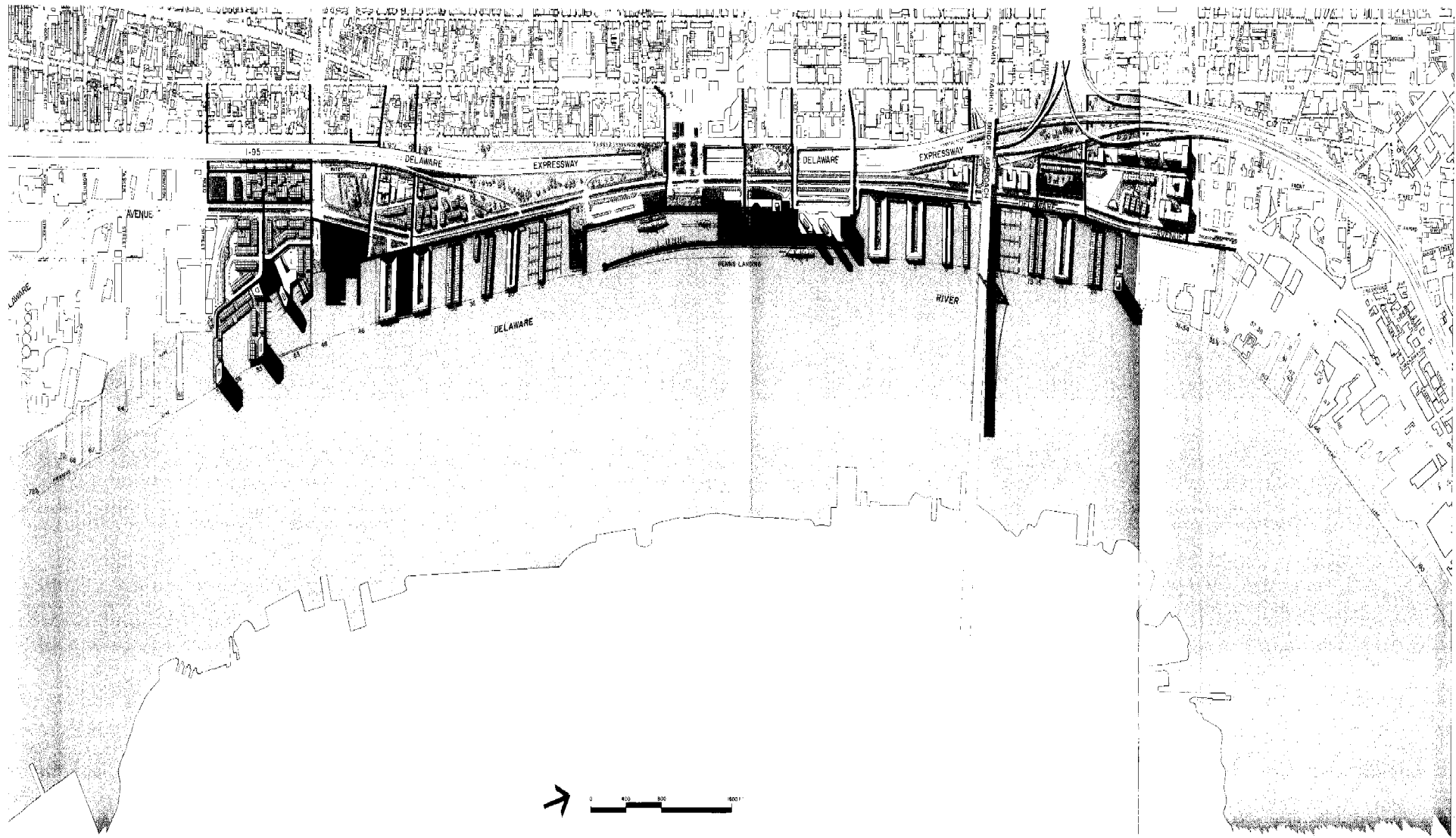
residential towers, lower scale townhouses and retail stores on piers and at the water's edge and on the adjoining land. In North Bridge, numerous existing buildings can be reused for housing and retail uses, and this area will retain some of the historical character of an urban riverfront. In Penn's Landing South, most of the development will be new. Here a mixture of residential towers designed to capture the tremendous views up the river could be built along with a much lower scale complex of housing and retail stores on adjacent land. On the land side, housing would consist of clusters of townhouses. The number of housing units that could be developed in this area range from 1000 units to 2450 units. The more intense development could be achieved through a mix of residential towers, townhouses and open space focused on the river, while the less intense option would consist of smaller residential towers, fewer townhouses and additional land side open space. The focus of Penn's Landing South will be a small harbor and marina designed to serve residents. Adjacent to the harbor will be a small public plaza and retail center. The character of this plaza will be much less formal than the plaza proposed for Penn's Landing, and the retail center will serve primarily the needs of the residents.

The Central Riverfront District will be an intense urban setting, but the river itself allows high density to coexist with a substantial opportunity for recreation. The river's edge was seemingly made for recreational activity, and the plan takes full advantage of this. The Delaware River provides dramatic urban vistas for passive enjoyment as well as an opportunity for more active recreation. The Riverwalk will link all new development along the riverfront. A small harbor and public marina will be the focus of Penn's Landing South. A second marina will be developed

## Planning Concept







ILLUSTRATIVE SITE PLAN



in North Bridge and a third could be developed just south of Penn's Landing. In addition, the housing developed on the piers and at the water's edge will provide private boat moorings to serve the new residents.

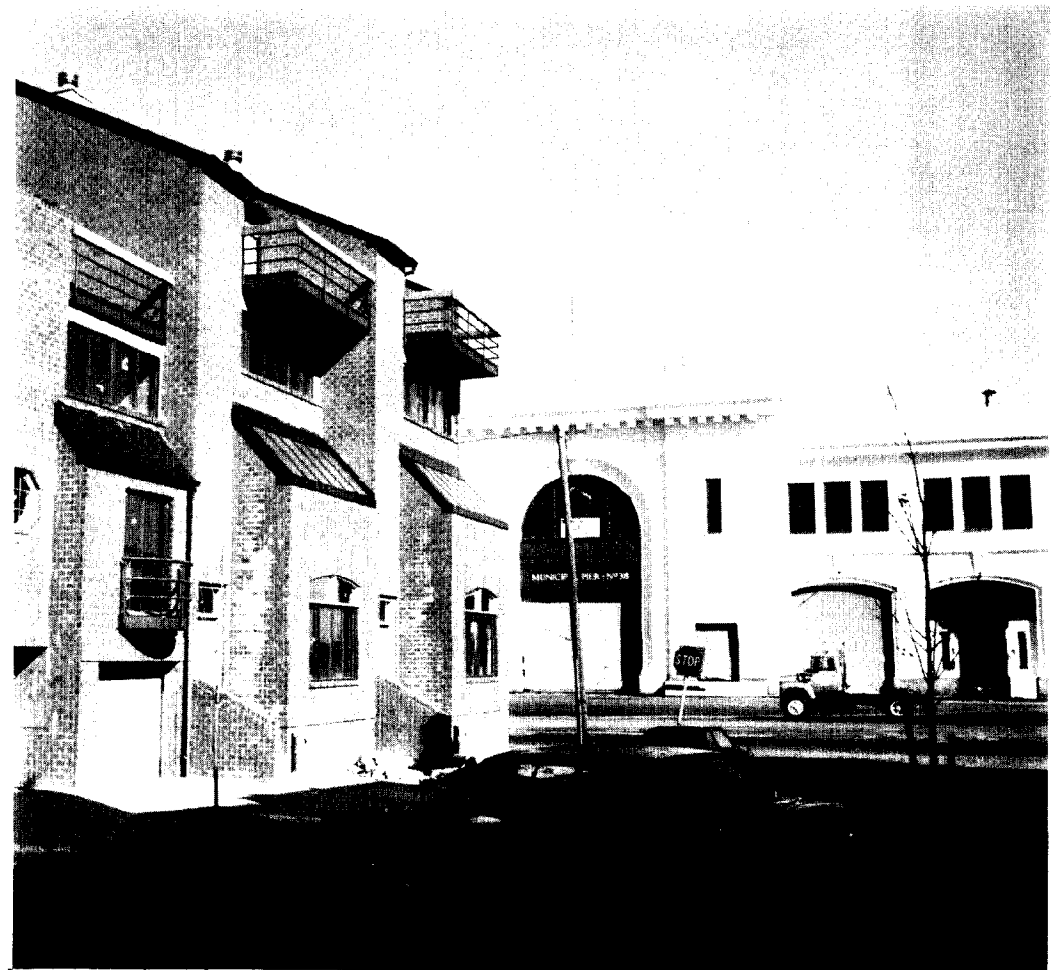
Another conceptual element of the Central Riverfront Plan is to reinforce the relationship between the new development along the riverfront and the commercial core and residential communities of Center City. As a result of this plan, Center City will expand to the water's edge. The Central Riverfront will develop into a major commercial center, primarily at Penn's Landing, where offices, housing, a hotel and institutional uses will be constructed, but also elsewhere in the district. This new commercial center must be integrated with Center City if it is to become economically vital. Over time, two new residential communities along the riverfront will be created. These communities both north and south of Penn's Landing will be supported with shopping, recreation and other services. These new residential areas will be buffered from adjoining uses where that is appropriate. An important element of this plan is the integration of these new neighborhoods with the residential fabric of adjacent areas.

The final element of the Central Riverfront Plan is to make this area of the Delaware Riverfront a unique attraction for tourists. The recreational opportunities of the riverfront will be exploited not only for the benefit of the new residents but also to attract riverfront visitors. Tourists will be invited to experience this unusual urban riverfront environment and also to take part in unique riverfront activities. Attracting tourists to the Central Riverfront and integrating this newly developing area with Center City and the

rest of Philadelphia will require improved highway, transit and pedestrian accessibility.

These conceptual elements form the basis of the Central Riverfront Plan. From these, a number of specific plan objectives were established and detailed recommendations made. When developed, the Central Riverfront will result in the construction of

5000 to 6000 housing units and creation of a major new commercial and retail center. It will take ten to fifteen years to complete. The total public and private cost of this new development will be nearly \$1 billion. Over 3900 new permanent jobs will be created. The site plan for the Central Riverfront illustrates one vision of how this development might appear when complete and how it could take place over time.



**TABLE 5: DEVELOPMENT COSTS**

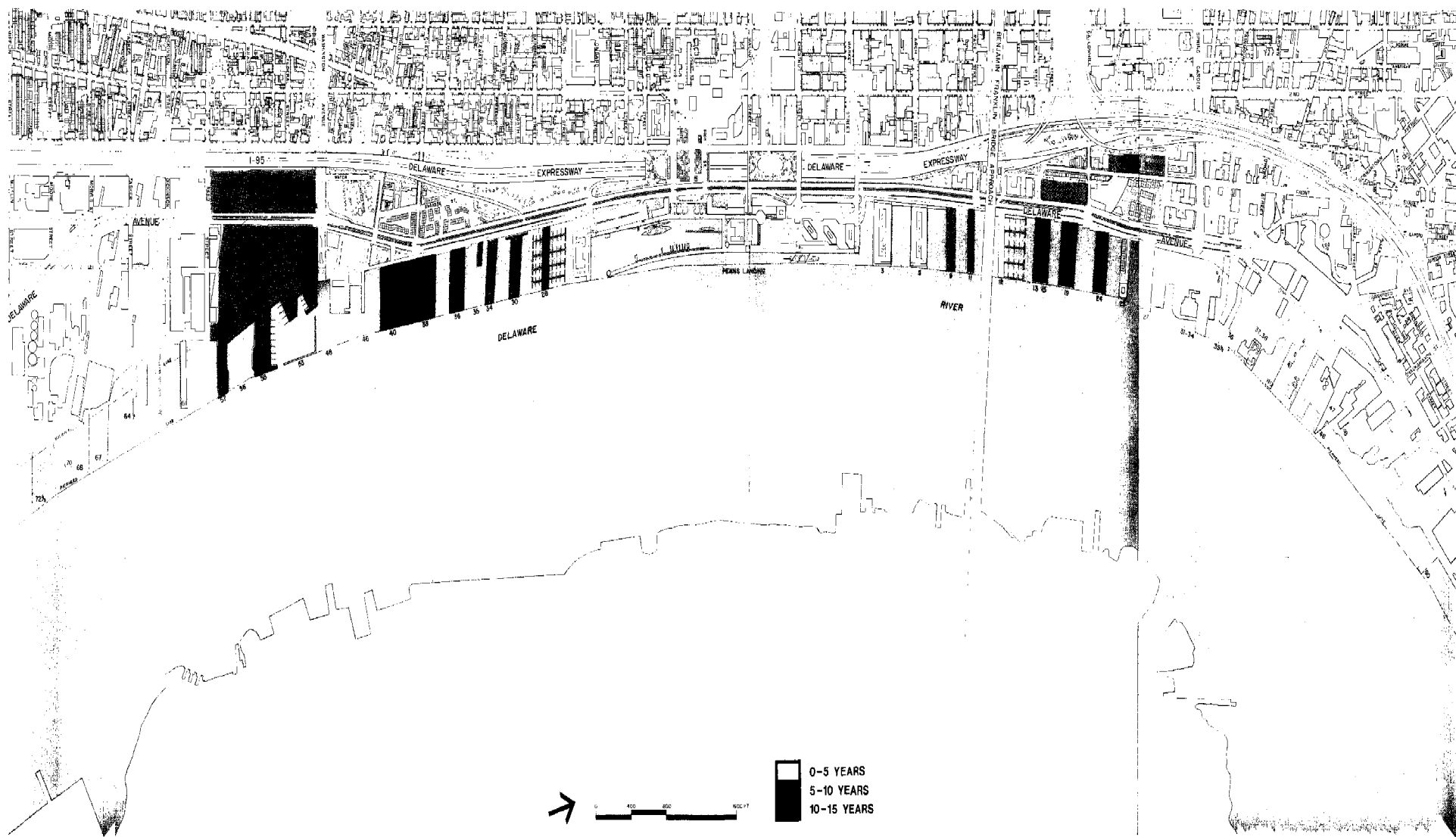
Sub-District	Alternative 1		Alternative 2	
	Program	Cost (\$1000)	Program	Cost (\$1000)
<b>Penn's Landing</b>				
Housing	700 units	87,500	700 units	61,125
Commercial	480,000 s.f.	36,000	500,000 s.f.	57,000
Retail	140,000 s.f.	10,000	440,000 s.f.	25,763
Exhibit	0	0	50,000 s.f.	3,750
Hotel	400 rooms.	24,000	400 rooms.	44,500
Public Areas	—	15,000	—	43,200
Sub-Totals		172,500		235,338
<b>North Bridge</b>				
Housing	2,245 units	314,020		
Retail	65,000 s.f.	3,900		
Sub-Totals		317,920		
<b>Penn's Landing South</b>				
Housing	1,773 units	248,220	3,223 units	451,220
Retail	120,300 s.f.	7,218	120,300 s.f.	7,218
Sub-Totals		255,438		458,438
TOTAL		\$ 745,858		\$1,011,696

SOURCE: Philadelphia City Planning Commission

**TABLE 6: DEVELOPMENT PHASING: HOUSING UNITS**

Sub-District	PHASE I	PHASE II	PHASE III
Penn's Landing	700	—	—
North Bridge	1,185	645	415
Penn's Landing South	133	135	2,955
TOTAL	2,018	780	3,370

SOURCE: Philadelphia City Planning Commission



# DEVELOPMENT PHASING



## Summary of Goals and Objectives

---

**Develop Penn's Landing as the focus of the rebirth of the Riverfront**

*Develop Penn's Landing as a major public attraction and center of activity*

*Encourage residential development at Penn's Landing*

*Develop Penn's Landing as a commercial center*

**Create vital, attractive new residential communities along the Riverfront**

*Encourage new residential development*

*Encourage residential rehabilitation of existing piers and buildings*

*Develop retail and commercial space to serve new residents*

**Provide opportunities for the public to enjoy the special amenities of the Riverfront**

*Encourage access and activity at the water's edge through the Riverwalk, pedestrian links and marinas*

**Improve access to and within the Central Riverfront District**

*Improve access to the regional highway network*

*Improve access to adjoining neighborhoods and Center City*

*Serve new development*

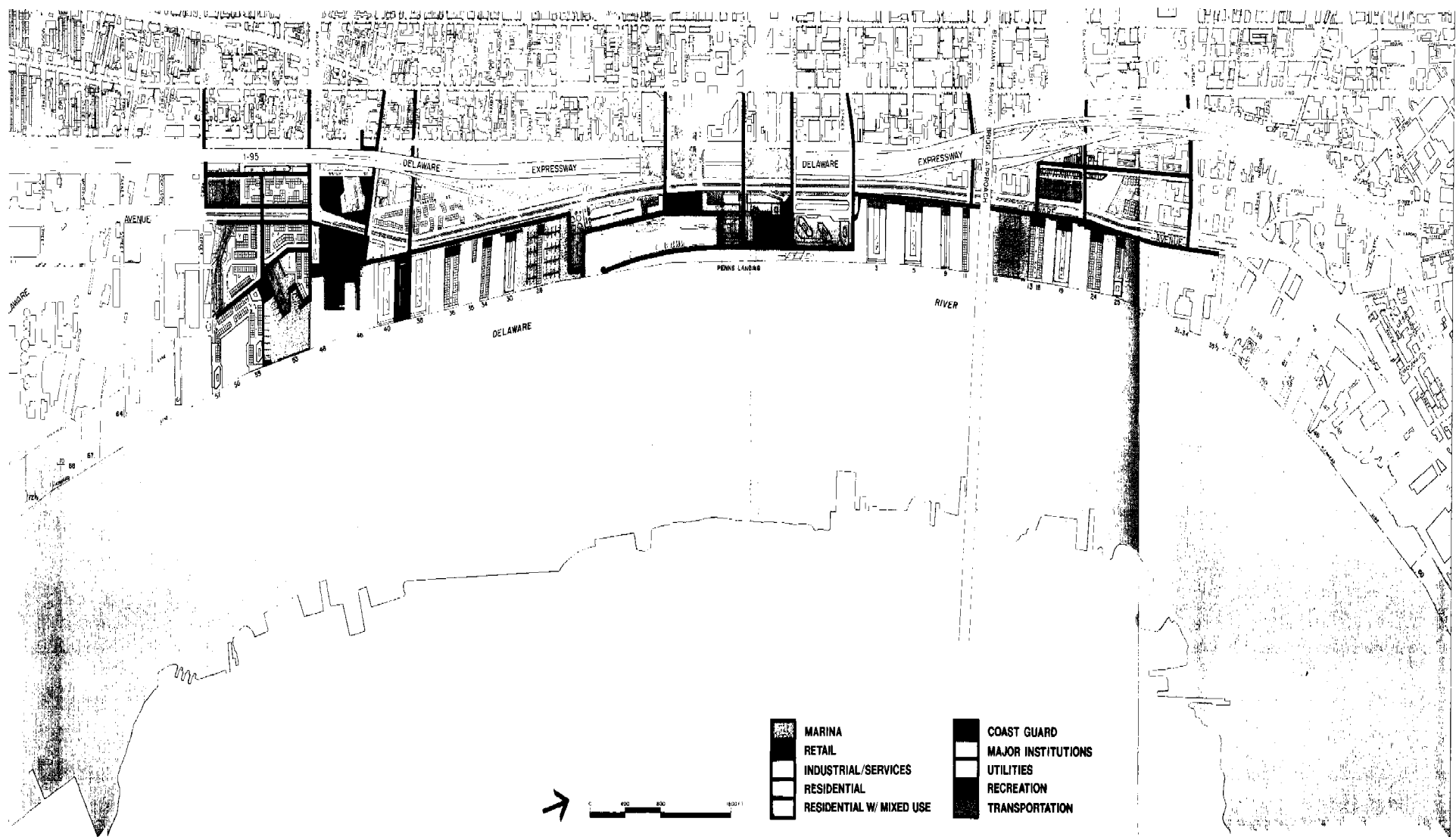
*Improve transit*

**Develop urban design guidelines which promote the vitality and attractiveness of new development**

*Develop major activity centers*

*Emphasize connecting elements*

*Develop appropriate urban design concept*



RECOMMENDED LAND USE

## Recommendations

### Penn's Landing

*Develop Penn's Landing as a Major Public Attraction and Center of Activity*

**Riverfront Plaza.** The major public space at Penn's Landing will be a riverfront plaza. This plaza will be the focal point of the new development at Penn's Landing and will serve as a gateway to the river.

Beyond providing open space, the plaza will offer a variety of casual activities such as walking, eating, relaxing, and sightseeing. The plaza will also serve as the center for the kind of special events that has made Penn's Landing popular—concerts, festivals, exhibitions and carnivals.

**Cultural and Recreational Attractions.** Penn's Landing will be developed with cultural and recreational activities designed to attract visitors and tourists. In addition to the existing boat basin and Penn's Landing Museum, an entertainment center, gardens and exhibition space will be developed. These permanent facilities, along with scheduled activities such as concerts, fireworks displays and shows, will act as a catalyst to attract visitors to Penn's Landing.

**Retail and Commercial Uses.** Restaurants, pubs, shops, markets and sidewalk vendors will be developed as part of Penn's Landing. Much of this activity will be oriented to the new plaza and will be designed to give the plaza its own character and life. All of these retail and commercial uses will serve the people living on Penn's Landing but also should attract many visitors and tourists.

**Parking.** New parking structures will be built to serve the anticipated influx of visitors attracted to Penn's Landing.

*Encourage Residential Development at Penn's Landing*

**Housing.** As part of Penn's Landing, new residential towers accommodating 500 to 700 units of housing will be developed. Penn's Landing will be a different and fascinating place to live. The new housing will be focused on the river to capture the views of the river and Center City. The housing will be designed to complement the public spaces of Penn's Landing and to take advantage of the retailing and other activities that will be provided. Residential development will provide a permanent population, adding to the atmosphere, security and self-sufficiency of the area.

*Develop Penn's Landing as a Commercial Center*

**Hotel and Offices.** Commercial development at Penn's Landing will include a hotel and offices. A hotel of about 400 rooms with associated convention space will serve not only tourists to Penn's Landing and Philadelphia but will be able to build a substantial convention and meeting trade on the basis of the unique environment provided by Penn's Landing and the Central Riverfront. Penn's Landing will provide a location for firms and businesses desiring a prestige location. Because of the location of Penn's Landing adjacent to Center City and with access to the Delaware Expressway, a strong office market should develop there over time. Many firms with a relationship to the port or the river could be attracted to these new offices. The daytime population created by office workers will strengthen the demand for retailing and will contribute to the mixture of activity at Penn's Landing.

### New Residential Communities

*Encourage New Residential Development*

**Residential Towers on Piers.** New high-rise residential development is recommended for Piers 25 North and 55, 56 and 57 South, which lie at either end of the Central Riverfront. Residential towers on these piers would capture the dramatic views down the Delaware River and back toward Penn's Landing and the skyline of Center City. Residential towers on these piers will define the edges of the district and are in keeping with the massive industrial structures they will be adjacent to. Approximately 750 housing units could be developed at the southern edge and 330 housing units could be built at the northern edge.

**Housing on Piers.** A mixture of townhouses, retailing, open space and parking is proposed for Piers 24, 13, 11, 9, 5 and 3 North and for Piers 28, 34, 35 and 36 South. These existing finger piers have sheds which are unsuitable for reuse, and the development on these piers will be substantially new construction. On each pier, sufficient parking will be provided to accommodate residents and retail customers. Retailing will be permitted as an accessory use to the housing. It will be oriented to shops serving the pier residents and to restaurants which can take advantage of the river views provided by these finger piers. About 865 housing units could be developed on these piers.

**North Bridge.** Along Delaware Avenue and Front Street in North Bridge, much land is either vacant or underutilized. New townhouses should be developed. These new units should be designed so as to capture views of the river. If all of the vacant land were developed, about 400 new townhouses could be built.

**Penn's Landing South.** The largest site for new housing development in the Central Riverfront district includes the underutilized or vacant railyards at the foot of Washington Avenue. While residential towers are proposed for the finger piers in this location, the adjoining land area of approximately 25 acres will be predominately developed for new townhouses with some higher density housing types. For the most part, new development in this area will consist of clusters of townhouses. These new houses will be designed to capture river views, and the focus of this new development will be a small harbor and retail center. With appropriate buffering from the industrial uses to the south, the site at the foot of Washington Avenue including the adjacent piers could be developed into a fully integrated residential development with retail to serve the new residents, with a small marina, and with public access to the waterfront. The number of housing units that could be developed on this site, including what could be developed on Piers 55, 56, and 57, ranges from 1000 to 2450 units.

Lower residential density for this site would be most similar in character to the adjacent neighborhood. Lower density would reduce the amount of parking needed and the demand for public services. On the other hand, higher density also has advantages. First, the cost of developing this land will be substantial and a higher density could allow this fixed cost to be spread over a larger number of units, thereby reducing the relative cost of this new housing. Second, a higher density would allow the developer to provide a higher level of public improvements and would achieve a greater level of neighborhood access to the river. Finally, higher density residential development could provide dramatic, open views of the river.

#### *Encourage Rehabilitation of Existing Piers and Buildings for Residential Use*

**Pier Shed Housing.** Where existing pier sheds are in sound condition and suitable for housing, their rehabilitation and conversion for residential use will be encouraged. The reuse of existing pier sheds will allow the Central Riverfront District to retain some flavor of its past as a center of port activity. The sheds will be converted into a mixture of housing, retailing, open space and parking. Parking will be sufficient to meet the need of both the residents and retail customers. As with new construction on piers, accessory retail uses primarily to serve residents and for restaurants will be encouraged. The piers with sheds with the greatest potential for reuse are Piers 19 North, 30 South and 38-40 South. While Piers 38-40 South present a unique opportunity for reuse because they are joined by landfill, these piers still have a useful port function. They are currently vacant, but they have the potential to be reactivated to active port use in the short-term. Until such time as it is conclusively determined that Piers 38-40 have no remaining potential for port use, they cannot be considered for conversion to residential use. Approximately 260 housing units could be developed on Piers 19 North and 30 South.

**Reuse of Industrial Buildings.** Several multi-story warehouses are present in the Central Riverfront District and could be converted into housing. Three of these warehouses are along Delaware Avenue in North Bridge and one is located adjacent to I-95 in Penn's Landing South. Rehabilitation of these obsolete industrial and warehousing buildings will provide an alternative housing type to that proposed for the piers or on vacant land. Reuse of these buildings will enable the Central Riverfront to retain a sense of the original

industrial character of this area. Over 600 housing units can be developed through the reuse of the warehouse buildings in North Bridge and 75 units can be developed in the reuse of the Beaver Dam Building in Penn's Landing South.

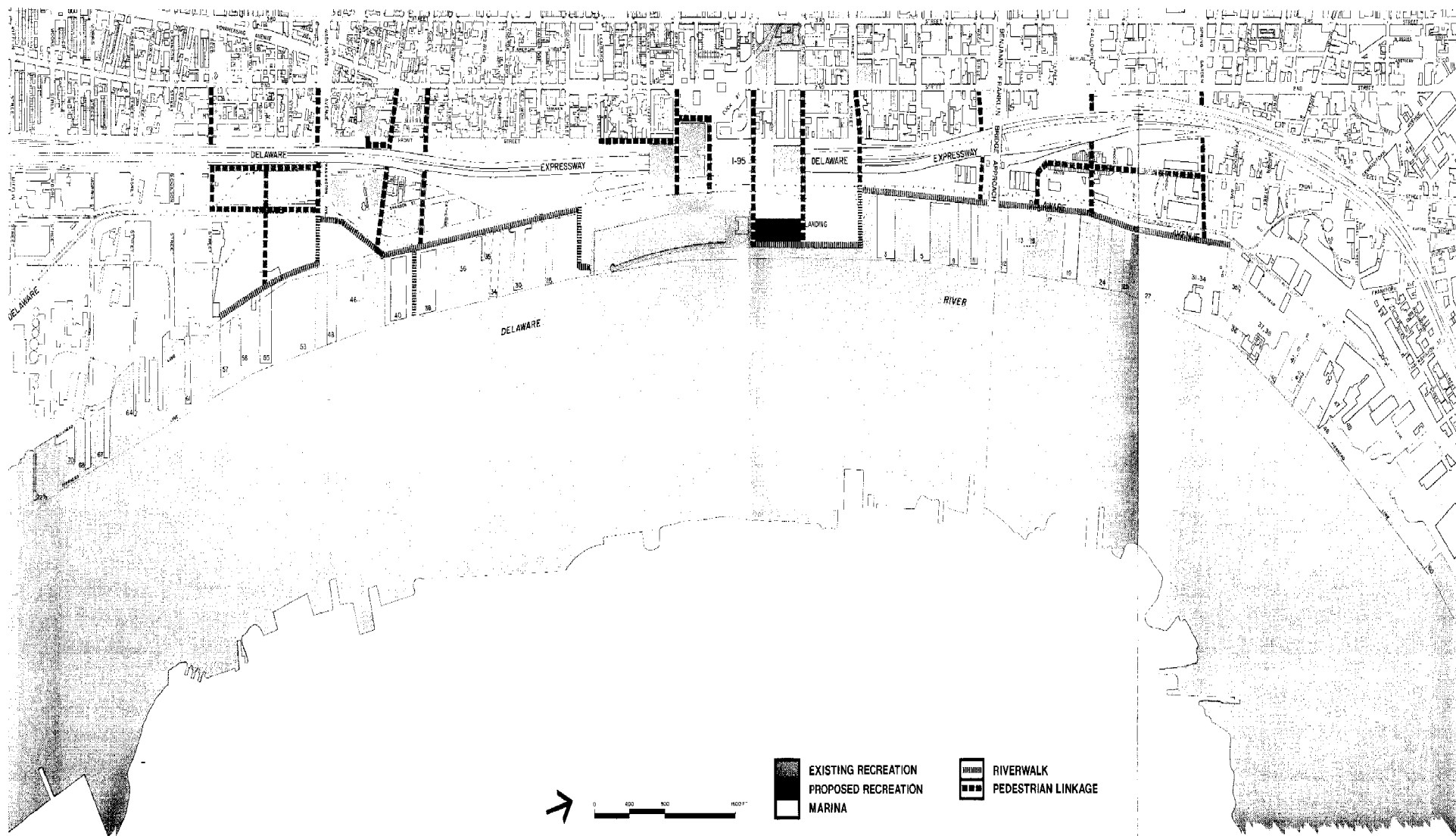
**Reuse of Buildings on Front Street and Delaware Avenue.** A number of three and four story industrial and commercial buildings exist along Front Street and other adjoining streets. Many of these buildings are vacant and some are in poor condition. These buildings should be rehabilitated where possible. Store fronts along Front Street can be rehabilitated for retail use on the ground floor with residential units in the upper floors. Even though many of these buildings are undistinguished historically, their restoration would be a valuable contribution to the character of North Bridge. About 150 units could be provided through the rehabilitation of these buildings.

#### *Provide Retail and Commercial Space to Serve New Residents*

**North Bridge Commercial Center.** A commercial center to serve the new North Bridge residents should be developed at Front and Callowhill Streets. Using the rehabilitated store fronts along Front and Water Streets as a focus, a small retailing center can be developed. These restored commercial buildings can be integrated into new retail development that could be located on Delaware Avenue south of Callowhill Street. Approximately 65,000 square feet of retail space, including a supermarket, will be needed to serve the new residents of North Bridge.

**Penn's Landing South Commercial Center.** Retail activity in Penn's Landing South will be located in two areas. A limited amount of convenience retail will be located





# RECREATION & OPEN SPACE

adjacent to the small plaza which together with the harbor will be the focal point of Penn's Landing South. A larger site for retail uses, including a supermarket with other accessory retail uses, will serve as a buffer between industry to the south and new housing proposed to the north. This site will also be able to take advantage of land under I-95 which can be used for parking to serve this new retail center. In Penn's Landing South approximately 120,000 square feet of retail space will be needed.

### **Public Enjoyment of the Riverfront**

*Encourage Access and Activity at the Water's Edge*

**Riverwalk.** A Riverwalk running along the bulkhead line from Penn's Landing South to North Bridge is a major recreational feature of this plan. In the future this Riverwalk may be extended beyond the Central Riverfront District north to Penn Treaty Park. The Riverwalk will connect all of the major activity centers of the District—Penn's Landing South, Penn's Landing and North Bridge. As the Riverwalk will be a major pedestrian walkway, it is very important that it be visually attractive and have a consistent design.

**Pedestrian Links.** Access for pedestrians from the adjacent communities of Northern Liberties, Old City, Society Hill, Queen Village and Pennsport must be enhanced. The existing streets connecting under I-95 should be improved so as to make walking to and from the riverfront safer and more appealing. Improvements such as landscaping, lighting, special paving and signalization should be considered. All of these pedestrian links should be directly integrated into the proposed Riverwalk.

**Marinas and Water Activity Areas.** The existing boat basin at Penn's Landing provides only limited opportunities for boating because it lacks services normally found at a marina. Three new marinas are planned for the Central Riverfront. One will be part of the harbor in Penn's Landing South. A second, although smaller marina will be developed near Pier 12 North located under the Benjamin Franklin Bridge. A third marina could be developed in the area between Penn's Landing and Pier 30. While three marinas will provide full service for residential and transient boat owners, boat launching and out-of-water storage of boats will be limited in the Central Riverfront District.

### **Access To and Within the District**

*Improve Access to the Regional Highway Network*

**Build the Vine Street Expressway with Connections to I-95.** The Vine Street Expressway is important because it will provide ramp connections between Vine Street and Interstate 95, thus relieving congestion on Race Street and at the intersection of the I-95 off-ramp with 2nd and Callowhill Streets. Race Street is the single most important access route to the district, and it is estimated that approximately 60 percent of drivers returning to the district from work would use Race Street if the congestion were relieved. The reduction in traffic volume on the Race Street entry ramp would also allow the Summer Street entry ramp from Delaware Avenue to be opened.

**Complete I-95 Ramps.** Two important I-95 access ramps in or near the district have been partially completed. Within the district, there is a northbound exit ramp which leaves I-95 in the vicinity of Queen Street and would connect to Delaware

Avenue in the vicinity of Bainbridge Street just south of Penn's Landing. This ramp is important not only to the riverfront but also to inter-regional access since it is the only northbound exit ramp near Center City.

The second I-95 ramp which should be completed is the Morris Street southbound entry ramp. This ramp has been constructed but never opened due to community opposition. A solution is being considered which would connect the ramp directly to Delaware Avenue instead of Front Street, thus reducing the potential traffic and noise impact on residents of Front Street. Opening this ramp would allow traffic to avoid driving all the way south of Oregon Avenue in order to get on I-95 southbound.

In addition, other ramp connections should be studied which could improve access to and from the west and from the north. Especially useful would be ramps between the Vine Street connectors and the Central Riverfront District. As currently designed and partially constructed, the Vine Street-I-95 connecting ramps are located such that they merge with I-95 south of the Delaware Avenue ramps. Thus, drivers traveling between Delaware Avenue and Vine Street must use local streets (Race and Callowhill) east of 8th Street. Another possible connection to be considered is a southbound exit ramp from I-95 to Penn's Landing. The I-95 ramp study should include consideration of each of these options and will estimate the projected use of these various ramps.

**Signs to Penn's Landing.** Better signage is needed, especially on I-95, to direct cars to the best routes to Penn's Landing, Center City, and major parking facilities. This measure can help to reduce unnecessary traffic caused by drivers who are lost or who are searching for parking. Signs are

also needed to direct traffic from Penn's Landing and Center City back to I-95 and other regional highways.

*Improve Access to Adjoining Neighborhoods and Center City*

**Make Callowhill Street Two-Way Between 2nd Street and Delaware Avenue.** There is now no westbound connection from Delaware Avenue to Center City between Spring Garden Street and Market Street. Using the Market Street exit ramp from Penn's Landing requires drivers from the northern portion of the district to go south as far as Walnut Street. Callowhill Street is westbound west of 2nd Street and serves as a major westbound route in the Vine Street corridor. After completion of the Vine Street Expressway connections to I-95, traffic at the 2nd and Callowhill intersection should be relieved sufficiently to permit two-way travel east of 2nd Street. This action would serve a great many drivers wishing to reach the Vine Street corridor in the morning and would fill a significant gap in riverfront access.

**Alleviate Existing Congestion at Delaware Avenue and Spruce Street.** During afternoon peak periods, traffic headed for Delaware Avenue on Spruce Street backs up to Front Street and down Front Street south of Pine Street. This existing problem could be alleviated by a number of minor actions. These actions, including changes in signal timing, signing and striping, and parking regulations, would also allow these streets to handle additional cars going to the riverfront without adversely affecting the Society Hill community.

*Serve New Development*

**Complete Delaware Avenue.** Delaware Avenue improvements, already completed between Vine Street and Catharine Street,

should be extended north, at least as far as Spring Garden Street, and south, at least as far as Morris Street. These improvements include channelization and increased traffic controls and are necessary to serve increased volumes of vehicles that will be generated by new development in the Central Riverfront District. New traffic signals will be needed at several locations, including Race Street, Callowhill Street, and Summer Street. Improvements to the road surface are also needed.

**Complete the Penn's Landing Loop.**

Completion of the Penn's Landing Loop from Chestnut to Market is essential for easy pick-up and drop-off, taxi and bus access to Penn's Landing. Since Market Street and Chestnut Street are the two most centrally located connections between Center City and the Central Riverfront, they must be useful to traffic destined for riverfront locations other than Penn's Landing. Because of this, Penn's Landing circulation should be designed to allow through traffic to flow without undue interference by parking, taxi unloading and queuing, and other activities related specifically to Penn's Landing. At present, access onto Market Street from the northern part of the district is inconvenient, requiring cars to travel south to Walnut Street and make a U-turn before entering the Penn's Landing circulation. A possible improvement to this situation would be to allow a left turn from southbound Delaware Avenue into Penn's Landing near Chestnut or Market Street to permit access to the Market Street ramp.

**Public Parking Garage.** A parking garage is proposed to serve public uses at Penn's Landing. This facility is a necessary public investment if Penn's Landing is to remain a very popular public amenity. As the existing public parking lots are replaced by private development, new parking must be

built. A parking garage will preserve the public element of Penn's Landing, while helping to attract quality investment.

**Parking Under I-95.** Also recommended is parking under I-95. Public parking at the I-95 right-of-way has been very successful in the area between Pine and Fitzwater Streets but has been poorly utilized in some other locations. Two areas where parking under or adjacent to I-95 might be considered are in the vicinity of Christian Street and in the North Bridge area.

**Reduced Parking Rates for Weekends and Evenings.** During weekends and evenings, drivers are reluctant to pay parking rates commonly accepted during weekdays. As a result, many garages are very much underoccupied during these times, even though curb parking is over capacity with substantial illegal parking. A reduced parking rate at the Penn's Landing garages would help to encourage use by tourists and visitors to special events at times when parking demand from office users is low. Reduced weekend rates are also suggested for the Independence Mall garage, in conjunction with a shuttle transit service.

**Ensure Adequate Parking or Supplemental Transit for Riverfront Residents.** Because of the mixed land uses recommended for the Central Riverfront, it is important that riverfront residents have adequate parking provided for their own use. This will minimize potential conflicts between residents and non-residents who are attracted to the recreational and commercial activities planned for the district. Since all lanes on Delaware Avenue will be needed during commuter peak periods for traffic flow, curb parking on Delaware Avenue cannot be made available for residential use. The developers of new housing on the piers and on the adjoining land will be required to



provide sufficient parking to meet the needs of the new residents and to serve any new retail or commercial uses. In some cases this parking requirement could be reduced if a developer provides special bus service, similar to that provided by several buildings along the Benjamin Franklin Parkway, or if SEPTA is able to provide regular bus service along Delaware Avenue in the future.

#### *Improve Transit*

**Improve Bus Service.** Proposed development of the Central Riverfront will require improved transit service. The Penn's Loop bus, the 42 bus and the Washington Avenue bus routes (63 and 64) should be extended to Delaware Avenue.

The 40 bus should be extended to Front Street, which was once its terminus. In addition, reinstitution of north-south bus service along Delaware Avenue may become feasible when intensive development of the district occurs.

**Provide Transit Service During Special Events.** During special events, both parking and access may be strained beyond capacity. To help alleviate this problem, shuttle bus service could be provided along Delaware Avenue to connect the Central Riverfront with the Independence Mall garage at 5th and Market Streets. This garage, which has a capacity of 650 spaces, is very much underutilized on weekends. Delaware Avenue itself could accommodate a significant amount of

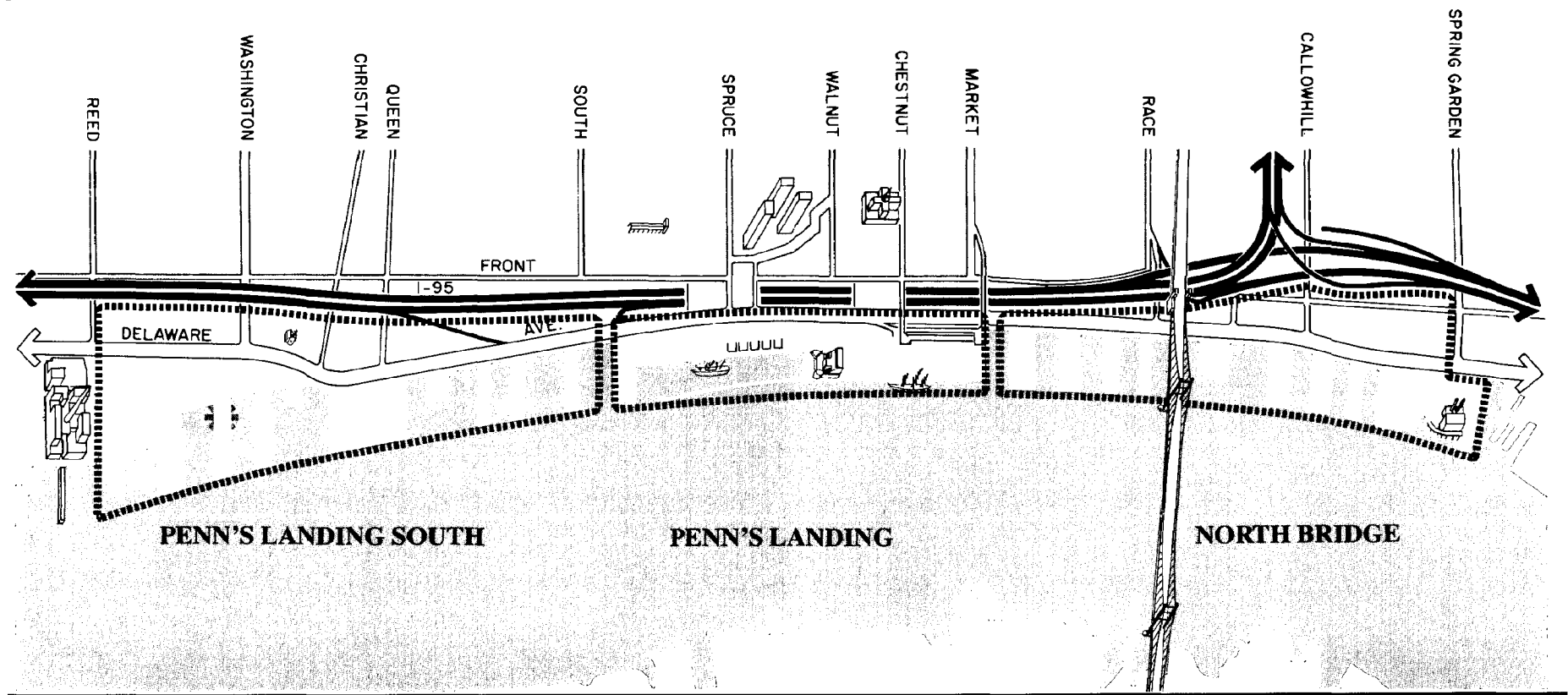
parking in the curb lanes at any time except peak commuter periods.

#### **Urban Design**

The development of the Central Riverfront District will be guided by a set of urban design principles that will ensure that the City's goals for the Riverfront are achieved. These goals can be achieved if the nature of each major activity center is clearly understood, if a definite set of policies is established to create linkages among these activity centers and to the existing fabric of development, and if a number of urban design concepts are adhered to.



## Activity Centers



### Major Activity Centers

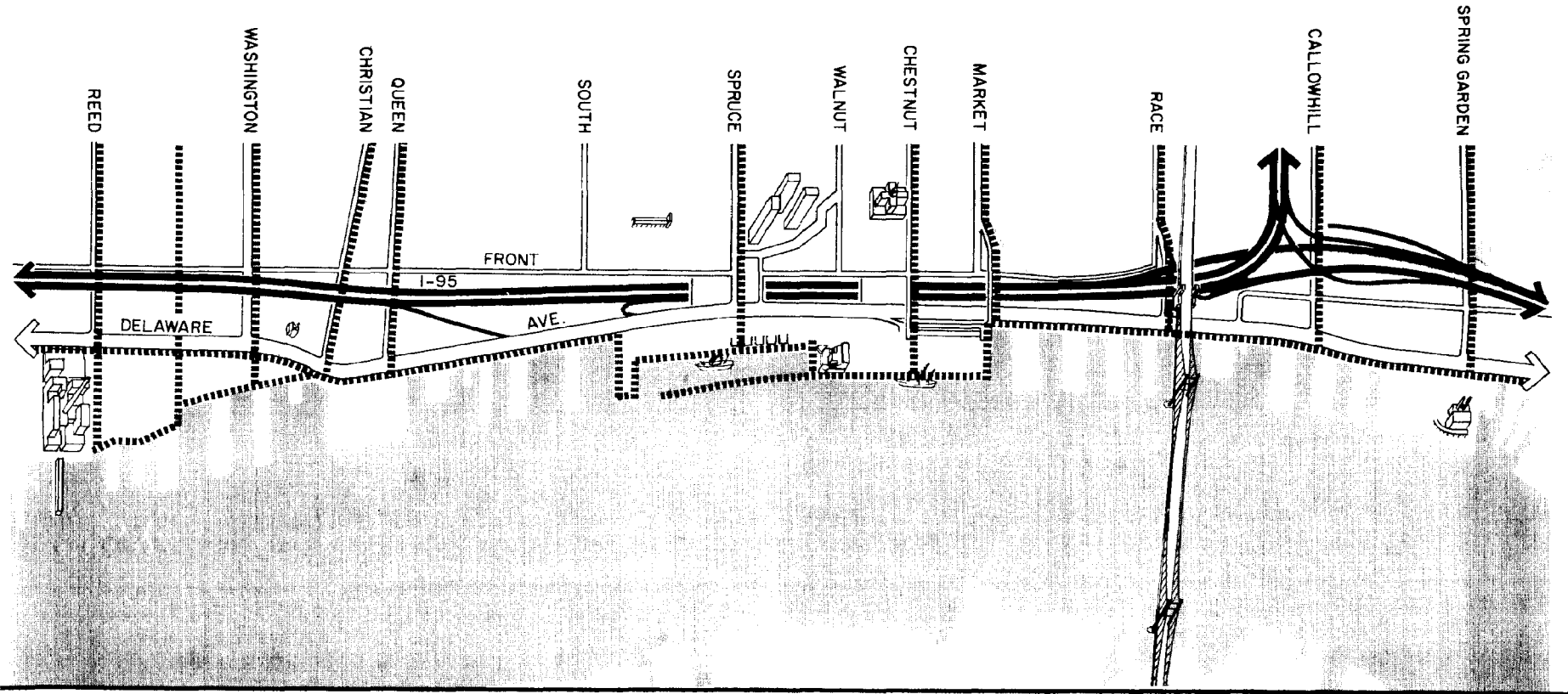
The Central Riverfront District can be divided into Penn's Landing, North Bridge and Penn's Landing South. Each sub-district has the potential to become a unique residential community. Each should be designed to include centers devoted to public use, such as commercial space or recreational facilities, or both.






Penn's Landing would be the most intensely used center and would serve as a riverfront focus for the City and the region.

The North Bridge activity center would be the least intense and would be located at Pier 12. It is to include a small marina and a place at the end of the pier where people can simply enjoy the views of the Delaware River and the Benjamin Franklin Bridge.

In Penn's Landing South, a small public plaza, commercial court and marina is proposed along the water's edge. This activity center would serve new residents as well as provide an attractive access to the river for residents of adjoining neighborhoods to the west.

## Connecting Elements



-  VEHICULAR ACCESS
-  PEDESTRIAN WALKS
-  RIVER ACCESS
-  HEADHOUSE ACCESS
-  MARKET-FRANKFORD EL

### Connecting Elements

Several major and a number of minor corridors provide vehicular, pedestrian and visual access to the riverfront. These connections are key elements in linking new riverfront development to the existing fabric of adjacent neighborhoods. These connecting elements should be strengthened and emphasized in the design of new private development and public improvements.

The Riverwalk will be the most important connecting element for pedestrian and visual access. Offshoots of the Riverwalk would lead directly to the water's edge at points where public access is to be encouraged and provided with overlooks. These pedestrian linkages should be given design treatment similar to the Riverwalk in order to strengthen the connections with neighborhoods west of I-95. This would include similar paving, landscaping and pedestrian amenities.

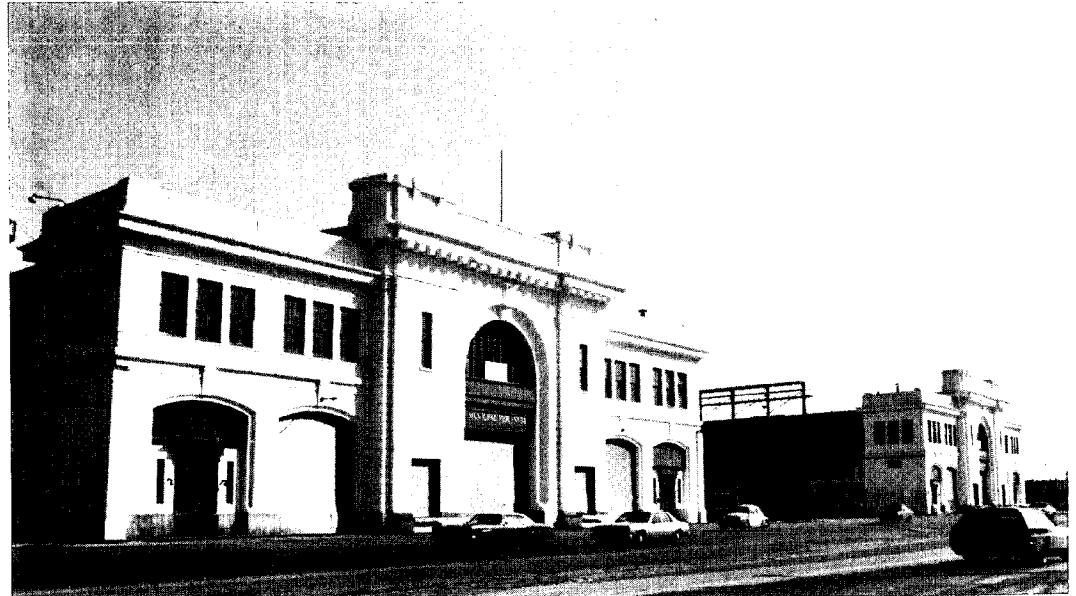
Visual corridors also require protection and emphasis. New buildings should be designed in such a way as to avoid blocking valuable views. Visual corridors can, in some cases, be enhanced by new development. New buildings can help to frame particularly attractive views. In other locations, new buildings or activities can punctuate and give focus to visual corridors. A major example of this would be at Penn's Landing, where a major building or complex at the end of Market Street will strengthen the visual connection of Penn's Landing to City Hall and Center City. The view from Washington Avenue, also offers a special opportunity. The proposed Coast Guard Station and private marina provide an interesting opportunity for views of ships and boating activity.

#### *Urban Design Features*

The Central Riverfront Plan presents an urban design concept consisting of five features.

**Scale of Development.** Penn's Landing, the central focus of the district, will be developed in an intense way. Towers are recommended for this site as well as clusters of low and mid rise structures. The scale of development will taper to the north and south with other towers proposed at the extreme northern and southern ends of the district. These will clearly define the edges of the residential area while relating in scale to the massive industrial and public buildings immediately outside the area.

**Orientation.** The primary orientation of development throughout the area should be eastward toward the Delaware River in order to take full advantage of this visual asset. While all structures at the river's edge and high-rise structures throughout the area will have a full view of the river, low and mid-rise structures further from



the river should be oriented toward inner courts, small public places or other activity areas. Delaware Avenue and Riverwalk should also be considered as visual elements in the siting of buildings and other key design features.

**Rhythm.** The water's edge in the Central Riverfront District is broken by the penetration of finger piers and Penn's Landing into the water. Along Delaware Avenue there is a pattern or rhythm established by the solid structures of the headhouses and the voids through which is provided a view of the water. The reuse of finger piers will preserve this rhythm.

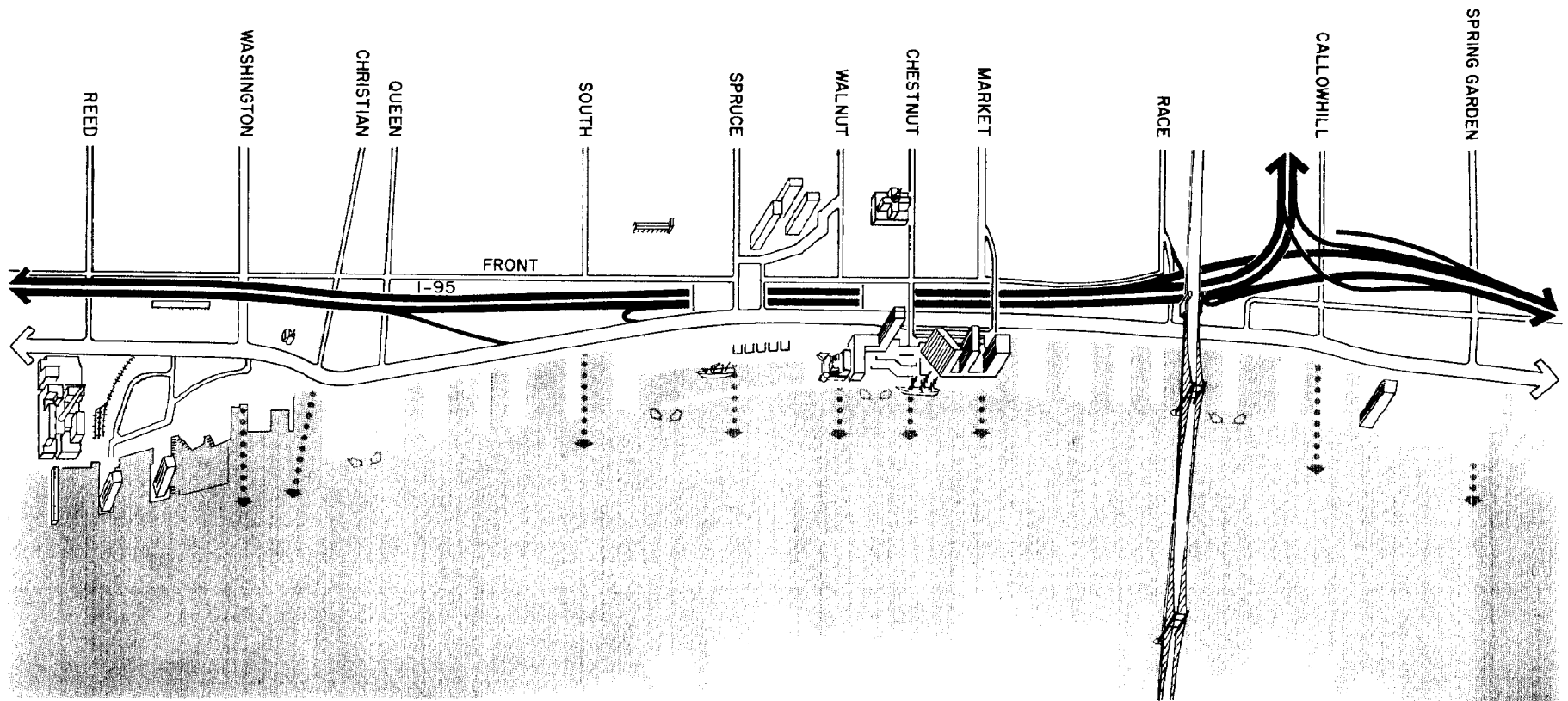
**Buffers.** New development in the Central Riverfront District will be designed so that buffers are created between living and working spaces and industrial uses which exist to the north and south of the district. In addition, features to buffer highway and

traffic noise from I-95 and Delaware Avenue will be designed into the new development. These buffers will visually and physically separate differing land uses where this is appropriate.

**Use of Existing Piers and Structures.** Among the existing stock of pier buildings and decks are a number of pier sheds which have a potential for rehabilitation and adaptation to uses other than those for which they were originally designed. In the cases of several sheds, the column spacing, bay widths, floor to ceiling clearances and clerestory features typically enhance this potential for residential, commercial and accessory use. Many of the piers in the Central Riverfront have head houses which are architecturally distinct and which should be preserved. Restoration of these head houses and other nautical details will preserve the historical character of this area as a port center.



## Urban Design Features



- |  |                           |
|--|---------------------------|
|  | LOW RISE                  |
|  | VISUAL CORRIDOR           |
|  | VIEWS                     |
|  | FACADE TREATMENT          |
|  | PRESERVATION OF HEADHOUSE |
|  | LANDSCAPED BUFFERS        |

## Implementation

The implementation of the recommendations contained in this plan requires both public and private actions. To ensure that the private development meets the City's overall goals and objectives for the Central Riverfront District, public regulations must be adopted. In some instances, this may require that the existing regulations be amended in order to reflect changing public priorities for use of the nation's water resources.

**Federal legislation should be adopted declaring certain waters in the Central Riverfront between the bulkhead and pierhead lines non-navigable.** The current Federal navigational servitude over the waters of the Central Riverfront precludes clear title from being given to private development on piers. Established by the Constitution to protect interstate and foreign commerce, this servitude gives absolute control over development in and affecting navigable waters to the Federal government. Consequently, developers may be either unable to obtain financing commitments for development or unable to finance large scale development. Since it is clear that the developable areas of the Central Riverfront have virtually no current or future relationship to waterborne commerce, the Federal servitude should be removed from the affected waters as has been done for Penn's Landing. This would be accomplished by federal legislation declaring certain pier areas as non-navigable. Such a declaration would eliminate possible financing problems and enable the highest quality development to be realized. It would, in addition, eliminate any need to obtain Section 10 permits from the U.S. Army Corps of Engineers.

**The City should seek to have the State convey title rights for private development along the Central Riverfront.** Title to lands lying beyond the bulkhead line in the Delaware River bed is, with the exception of Penn's Landing, held by the State in trust for the public. The State has not traditionally conveyed the title for private development, but instead has granted permits for specific development activities. Consequently, the financing of private development will be hampered.

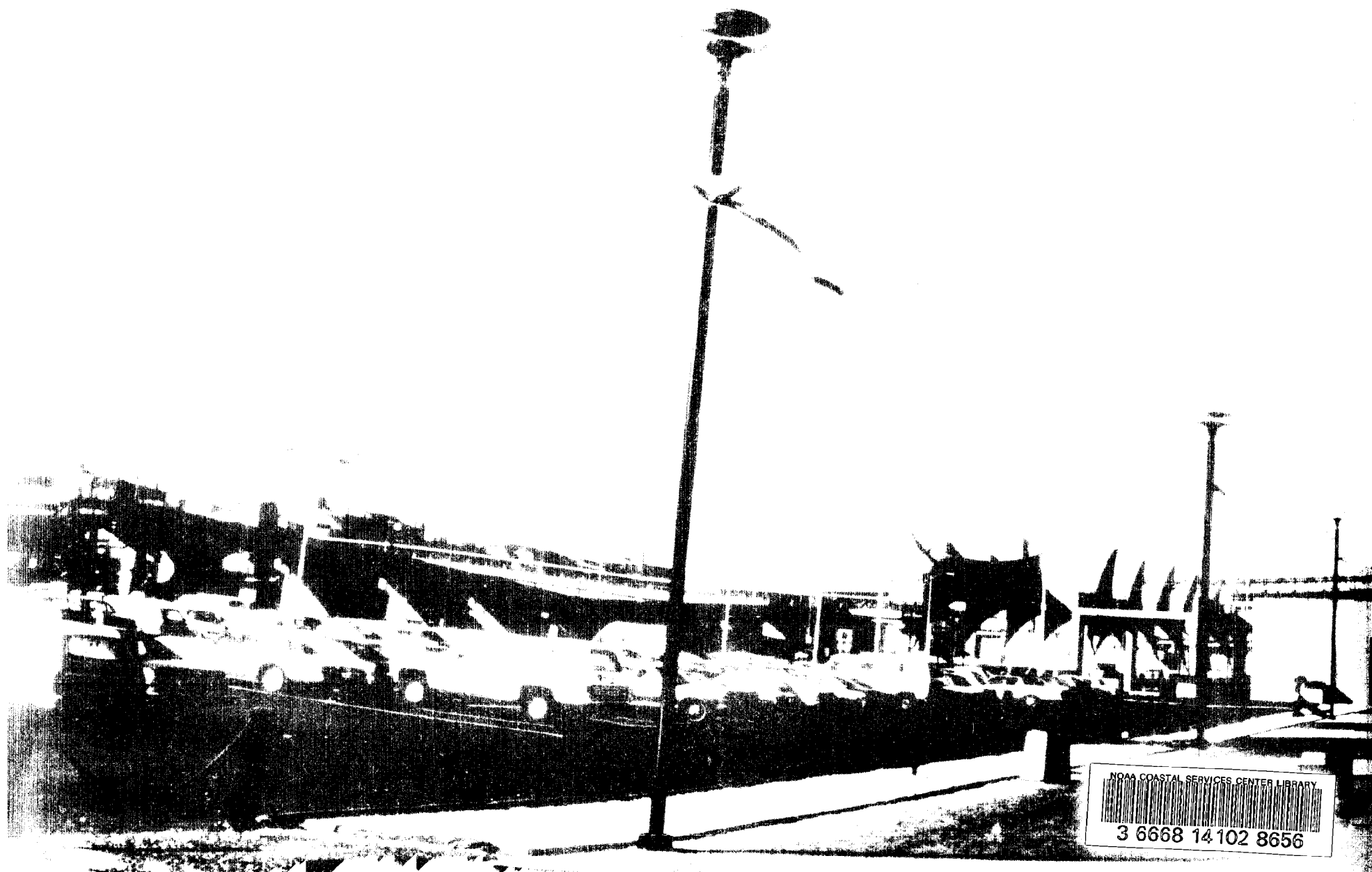
More significant however are the potential problems which could arise from a marketing of residential development on State owned land. If the State is willing only to lease property, development on that property would legally constitute only a leasehold improvement. Although common to commercial developments, leasehold investments are rare for residential uses. Individuals investing in leasehold residential units may legally hold no real property interest and therefore they may potentially not be able to claim tax deductions for any indirect property tax obligations.

In addition, since individuals could only invest in a long-term lease, some initial market resistance may be encountered in connection with any leasehold condominium development. Due to the uniqueness of this type of residential investment in Philadelphia, the financial community as well as individual investors may be hesitant to undertake such a development with this type of restriction.

By conveying some form of title rights to private interests, the State would minimize any perceived risks, in turn ensuring that public goals and objectives for riverfront development are met.

### **Photographic Credits**

Cover, Ernest J. Leonardo; Contents, Ernest J. Leonardo; Introduction, Keystone Aerial Services, Inc.; page 2, Massoud Mohadjeri; page 4, Ernest J. Leonardo; page 10, Ernest J. Leonardo; page 12, Free Library of Philadelphia; page 14, Historical Society of Pennsylvania; page 19, Massoud Mohadjeri; page 23, Massoud Mohadjeri; page 27, Ernest J. Leonardo; page 28, Ernest J. Leonardo; page 31, Alois K. Strobl; page 33, Ernest J. Leonardo; page 43, Alois K. Strobl; page 44, Alois K. Strobl; page 48, Alois K. Strobl; page 50, Ernest J. Leonardo; page 55, Ernest J. Leonardo; page 57, Alois K. Strobl; page 71, Ernest J. Leonardo; page 72, Ernest J. Leonardo.



NOAA COASTAL SERVICES CENTER LIBRARY  
3 6668 14102 8656